United States Department of the Interior

BUREAU OF LAND MANAGEMENT
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Information Bulletin **No. CA-99-50**

To: California Desert District Manager

From: State Director

Subject: 1999 California Fire Management Plan

The attached Fire Management Plan is the result of a significant cooperative effort between the California Desert District Office, California State Office and National Office. The goal of this plan is to identify the most efficient fire organization (personnel, equipment and facilities) that collectively meets the Bureau's mission to sustain the health, diversity and productivity of California's public lands. This fire management plan is viewed as a "contract" that exists between the District Office, the State Office and the National Office.

The California Desert District Office Fire Management Plan (FMP) was developed through an economic analysis that determines the most effective level (MEL) of fire program organization that will meet your District's land management/resource protection objectives. The FMP's collateral goal is also to evaluate and identify the most economically efficient fire organization that can realistically accomplish the mission.

This FMP is the latest iteration in the Bureau fire planning process, and is used at the National level as a basis for fire program budget justifications and allocations for Fiscal Year 2000. You should be aware that periodic recalculations of your most efficient level of fire organization may be necessary due to changes in resource objectives, values at risk, fire protection responsibilities and land base. We anticipate the next large-scale FMP update/revision effort to occur in calendar year 2003.

In addition, please ensure the retention of the Type III engine resource that is currently located at Salt Wells Fire Station. Per the existing agreement between our respective offices, it was decided that the California Desert District would not change engine resources between the Barstow Field Office and Ridgecrest Field Office in the manner reflected in the CDD FMP.

Please review this document thoroughly, and ensure that the plan objectives are fulfilled to the maximum extent that our funding level allows.

Signed
Al Wright
Acting State Director

Authenticated
AJ Ajitsingh
Records Management

1 Attachment:
California Fire Management Plan **[Sent Under Separate Cover]**

United States Department of the Interior
Bureau of Land Management
California Desert District

FIRE MANAGEMENT PLAN

June 1998

SUBMITTED: _____ DATE: 7/24/98
Richard D. Franklin, Fire/Aviation Management Officer

RECOMMENDED: _____ DATE: 7-24-98
Tim Salt, Acting District Manager

APPROVED: _____ DATE: _____
Ed Hastey, State Director

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CALIFORNIA DESERT DISTRICT
Fire Planning Analysis

I. INTRODUCTION

A. Fire Management Planning for the California Desert District

The California Desert District (CDD) Fire Management Plan (FMP) is derived from the decisions made through land use plans and from objectives defined in other tiered planning documents (e.g., BLM Phase One Fire Planning and specific BLM Resource Management Plans). The land management planning system for the fire program is thus objective driven. The CDD FMP is designed around a decentralized "zoned" fire management program of interagency resources providing for the common good. The CDD FMP will provide managers within the District the information necessary to select the most economical fire management protection organization that meets established resource management objectives.

The CDD FMP is the basis for funding allocations and thus this document addresses all aspects of this District's fire management program. The managers within the fire program ensure that full consideration is given to all aspects of fire including but not limited to prescribed fire, fuels management and prevention. Therefore the stated purpose of this plan is to identify the most efficient organization that best meets those aforementioned land management objectives. The CDD FMP, once approved, identifies and accounts for the full work force, supplies, equipment, facilities, and cost (both one-time and annual) for all aspects of the fire program.

The CDD FMP has been developed within the guidance provided by Interior through BLM's National Office. Furthermore, the development of this Plan utilized an interdisciplinary approach, employing expertise from a variety of disciplines, including a private consultant along with the California Desert Fire and Resource Management Specialists to assure compliance with current land use plans. This interdisciplinary approach has established resource objectives for the California Desert which encompass fire protection and prevention responsibilities, along with fire use and fuels management. The CDD FMP is driven by these aforementioned land use management objectives to meet it's ultimate goal of efficient attainment.

This 1998 FMP update will replace the CDD's 1989 Fire Mangement Activity Plan (FMAP), as updated through 1997. This updated organization, developed as part of the FMP process, links the fire and aviation management workload to a current economic analysis built on historical fire occurrence and environmental conditions that affect resource values. Those values include, but are not limited to; wilderness, designated critical habitat and urban-rural interface. This plan, though underpinned on the existing situation (circa 1998), is intended to be dynamic, subject to annual review and updates to reflect the most current situation. In addition, the costs developed through this fire planning analysis, when approved, will be utilized by BLM as justification for current and out-year funding requests.

To assist in analyzing CDD's historic fire occurrence, historical data for the planning period 1986-1995 was gathered for input into the Interagency Initial Attack Analysis (IIAA) program. Those data, which itemize over 2,000 fires that occurred during this planning period, consist of total acres, number of fires, size of fires, production rates of suppression forces, initial attack times, burning intensities, rates of spread, fuel models, weather, and costs. The IIAA results, as

derived from this program, measure suppression costs plus net resource value change versus changes in initial attack protection. Using this program and its outputs, reasonable alternatives have been developed to determine the most effective/efficient fire organization which meets BLM's protection standards along with land-use planning objectives, yet are commensurate with anticipated fire problems on these lands, based on ten years of fire history (1986-1995).

B. Overview of the California Desert District

The BLM's California Desert District is an extremely large and very diverse land management unit. It includes lands situated within eight counties, including five of California's largest and most populated counties; Los Angeles, Orange, Riverside, San Bernardino, and San Diego. Geographically the California Desert encompasses approximately one third of all lands within the State and has one of the most complex interagency fire management programs within the United States. The Fire Management Program within the California Desert District must deal with a wide variety of fuels, terrain and weather conditions; high resource and improvement values; and numerous jurisdictional entities with some type of fire protection responsibility. This multi-facetted situation has resulted in a fire management program that must be dynamic, responsive to rapidly changing public demands, and protective of highly sensitive resources that require a minimum loss of acres to wildfire.

Inside the California Desert Conservation Area (CDCA), which is a Congressionally mandated designation encompassing the desert areas of southern California (*Federal Land Policy and Management Act of 1976, P.L. 94-579*), there are 69 Wilderness Areas managed by the BLM alone which were designated under the *California Desert Protection Act of 1994* (CDPA) and encompass about 3,700,000 acres. Furthermore, there are two National Parks and one National Preserve situated within the CDCA which have Wilderness Areas covering approximately 4,430,000 acres. In addition, there are 18 Wilderness Study Areas (WSA's), eight within the CDCA and the remainder are scattered throughout the chaparral brush lands of Southern California's coastal province. These WSA's, having been determined to fit those criteria (i.e.; roadless et al.) for designation as wilderness, have been and will continue to be managed to maintain their suitability.

Primarily the topography of these areas, being steep and extremely rugged, has historically precluded most forms of vehicular access, even for all-terrain types of fire fighting equipment. In addition, with WSA or Congressional "Wilderness" designation, which includes non-impairment criteria, access for fire fighting equipment is now legislatively and administratively limited to the exterior boundary of those areas, with few exceptions. This constitutes a new and significant workload for fire management within the California Desert since these areas now require the continued utilization of helicopters or other aerial suppression techniques to provide the most expedient access with the least impairment, and Wilderness Management Policy and WSA considerations must be incorporated into all fire planning, suppression and post suppression efforts.

Present and future land-use planning efforts are designed to assure that natural resources found on federal lands receive the protection they deserve. To accomplish those fire management objectives, as determined through the land-use planning processes, fire protection responsibilities have been set by geography: including resource values, land ownership patterns that reflect historical protection boundaries, and economic concerns. For example, BLM has direct fire protection responsibilities covering approximately 12 million acres in Southern California and a Fire Protection Agreement for suppression with the California Department of Forestry and Fire Protection (CDF) on approximately 440,000 acres of federal lands which are situated within the State's Direct Protection Area (DPA). As a result the Department's Fire Management Program within Southern California has two very

distinct and different sets of fire management objectives. BLM and their interagency partners NPS, within their combined DPA of approximately 18 million areas, are more responsive to resource values and management objectives on federal lands. Whereas CDF, within their DPA, is focused toward fire suppression, emphasizing an aggressive initial attack on all unwanted fires with the intent of controlling them as quickly as possible.

C. Fire Protection Responsibility in the California Desert District

For planning and identification purposes, CDD Fire Management Zones (FMZ's)are divided into two different fire protection area types within it's three FMZ's. BLM CDD provides direct fire protection in FMZ 1 and 2, containing a combined total of approximately 8.5 million acres. In FMZ 6 there are approximately 440,000 acres of scattered BLM CDD lands which are provided fire protection by CDF through the California Interagency Cooperative Fire Protection Agreement.

Historically, BLM has had a generally stated objective of "suppressing 90% of all wildland fire starts at less than 100 acres, utilizing a least cost/least damaging suppression strategy." A second generally stated fire management objective is to utilize prescribed fire for wildlife habitat improvement, range improvement, watershed enhancement, forest management, hazard reduction and the reintroduction of fire into vegetative communities that require fire in their natural life cycle.

Where CDF provides suppression, their mandate can be historically characterized as all-out-suppression at any cost. Yet this is changing and CDF's policy, as described in the *California Fire Plan* (March 1996), is to follow other land managing agencies protection standards, such as DOI's "least cost/least damaging" suppression strategy. However, based on an "assets at risk analysis," especially one which favors protection of structures, and with the intermix of federal and non-federal lands makes implementation of anything less than all-out-suppression problematic.

II. CALIFORNIA DESERT DISTRICT PLANNED FIRE MANAGEMENT PROGRAM

The approved Fire Activation Period for the CDD fire organization begins the first day of the first pay period in April through the end of the last day of the last pay period in October. This accommodates a two week start-up period for mandatory fire safety training. Staffing of seasonal fire resources are staggered based on an approved Staffing Plan. With major fire frequency in Southern California usually falling from early May through mid-September, the peak of seasonal hiring for firefighters is during the month of May.

Three of the five stations operate multiple fire engines. These are Apple Valley (three BLM engines), Black Rock and Hole-in-the-Wall (one BLM and one NPS engine, each). The remaining two stations, Olancha and Salt Wells (BLM), operate with a single engine, each. Personnel at these stations are assigned staggered days-off schedules to achieve seven-day coverage. During their operational period these forces face, on the average, 30 multiple fire days with three fires per multiple fire day. The large direct protection area and the extreme distances frequently required to be covered by any of the nine engines from the five stations often result in initial attack times of two to four hours. In some cases a travel time of seven hours would be required for an engine to reach certain points, such as a specific point chosen for calculation purposes as the centroid within a representative fire location. For BLM, IIAA modeling (based on ten-years of fire data) has demonstrated that utilization of a medium (type II) helicopter with a 10 person crew stationed at the Apple Valley fire station will reduce initial attack (IA) times to one hour or less, instead of two to four hours as dictated by the present organization, and thus significantly increase initial attack capabilities until additional engines can arrive.

The BLM approved 1989 FMAP for the California Desert included five stations, 64 seasonal fire fighters, one medium turbine helicopter and eight engines. In addition the preferred alternative selected in 1989 for the California Desert's fire organization (including suppression, prevention, fire use and fuels management, fire staff and administrative support) provided for a subtotal of $160,000 in "Fire Use and Management" (2811, formerly 1510) and $1,146,659 in "Preparedness" (2812, formerly 1520) for a grand total of $1,306,659.

For FY-97 and 98 the BLM California Desert District's Annual Work Plan (AWP) allocation provides for a a total of $1,350,000. The AWP allocation for 1997 was prorated to our approved 1989 FMAP, which was based on 1988 dollars and does not reflect inflation and the overall changes in the cost of doing business that have occurred in the ensuing years. These changes include a 10 percent in workmonth cost owing to a conversion of all firefighter positions from the "Range Technician" series to "Forestry Technicians." Furthermore, during this period there has been an additional 10.31 percent increase for "locality pay" and an overall 9.28 percent increase in labor/non-labor dollars attributable to inflation.

All BLM "force account" fire suppression operations are closely tied to an interagency "closest forces" concept. Any change in suppression resources by one agency will have an effect on other agency partners.

The planned, Most Efficient Level (MEL) Fire Organization is summarized in Table 1.

Table 1

MOST EFFICIENT PLANNED LEVEL OF FIRE ORGANIZATION

PERSONNEL

PFT Fire Staff (13)
District Fire Management Officer (1)
Asst. District Fire Management Officer (1)
Zone Fire Management Officers (3)
Helicopter Manager (1)
Station Managers/Captains (7)

Career Seasonal (20)

1	Asst. Helicopter Manager
1	Lead Helitack Crewman
7	Engine Operators
7	Asst. Engine Operators
3	Fire Prevention/Fuels Technicians
1	Watertender Operator

Seasonal Fire Fighters (33)

26	Engine Personnel
7	Helitack Personnel

EQUIPMENT

6	Type III Engines
1	Type IV Engines (BLM)
1	Type I Water Tender (BLM)
11	Overhead Vehicles (FMO, ZFMO)
3	Fire Prevention Patrol Unit
1	(Flight Crew) Crew Carrier
1	Type II Helicopter
1	Helitack Unit
1	Communications Unit
1	Terra Torch Unit

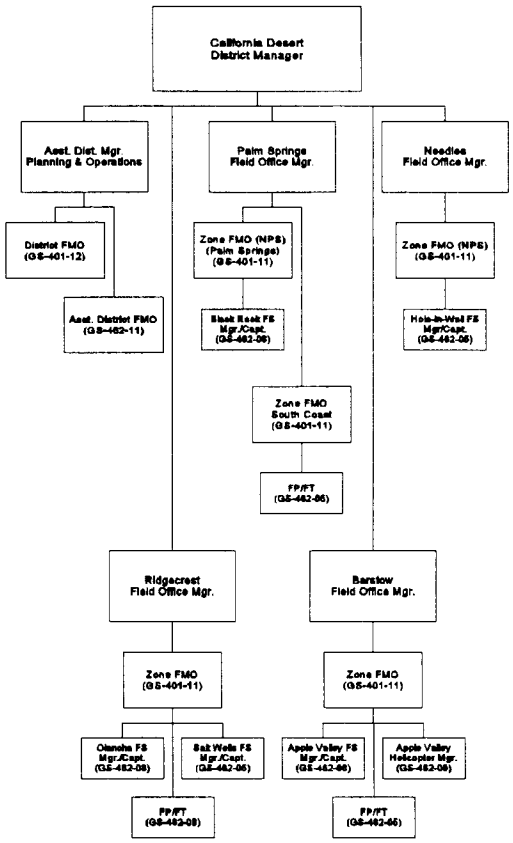
STATIONS

Apple Valley - 3 BLM Engines, 1 Water Tender
1 Type II Helicopter
Black Rock - 1 BLM & 1 NPS Engine
Hole-in-the-Wall - 1 BLM & 1 NPS Engine
Olancha - 1 BLM Engine
Salt Wells - 1 BLM Engine

FIRE PROGRAM ADMINISTRATIVE SUPPORT (2810)

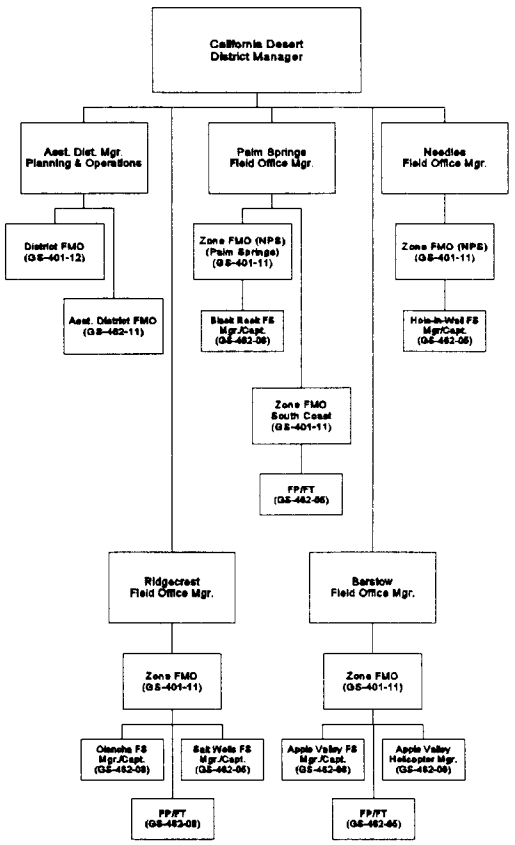
District Administrative Support	2 WM
District Radio Technician	2 WM
District Personnel Specialist	2 WM
District Budget Analyst	1 WM
District Pilot	2 WM
District Management	1 WM
District Interagency Dispatchers	14 WM
Field Office Administrative Support	6 WM

Table 2
District-wide Fire Program Organization Chart



NOTE: Detailed Organizational Staffing Chart, see page 17.

Table 2
District-wide Fire Program Organization Chart



NOTE: Detailed Organizational Staffing Chart, see page 17.

III. FIRE MANAGEMENT ZONES & REPRESENTATIVE LOCATIONS

The California Desert District has identified three Fire Management Zones (FMZ's) within it's administrative boundaries. These CDD FMZ's are delineated by large landscapes that share like fire behavior characteristics. Similarities in fire behavior characteristics are based on fuel models, weather patterns and topographical influences that exist within the set geographic area of an FMZ.

As previously mentioned, CDD Fire Management Zones are divided into two different fire protection area types within it's three FMZ's. BLM CDD provides direct fire protection in FMZ 1& 2 (reference the chart below). In FMZ 6, BLM CDD lands are provided fire protection by CDF through the California Interagency Cooperative Fire Protection Agreement.

Statistically, the historical CDD FMZ average annual occurrences and total acreage burned per year for the ten year planning period (1986-1995) is 151.5 fires, burning 25,439 acres. The following is a breakdown of fires and acres by Fire Management Zone (FMZ) for the California Desert District:

Fire Management Zone	Fires per Year	Acres per year
FMZ-1	92.3	4,501.7
FMZ-2	28.8	892.5
FMZ-6	30.4	20,046.2

The CDD FMZ's are further delineated by Representative Locations (RL's). These RL's are comprised of Phase One Fire Planning Polygons (planning unit areas), which reflect similarities in overall land management objectives (as identified in BLM resource management plans) and land management issues (e.g. critical habitat, wilderness, urban interface, etc.). RL's are further refined through identifying similarities in initial attack time frames and attack resources, fire frequency and occurrence, economic resource values, fire management objectives.

Each CDD Representative Location contains a "centroid", which is a point that represents the RL as a specific geographical location. For fire planning purposes, this centroid is that point used to calculate initial attack time frames for attacking and controlling fires within that specific RL polygon.

A. FMZ 1 - Sonoran/Mojave Desert Zone

FMZ 1 - Description

The Sonoran/Mojave Desert zone covers approximately 9,800,000 acres of public lands managed by BLM within the California Desert. It is comprised of lands below the 3,500 foot (msl) elevation and the predominant vegetation types are annual and perennial grasses, succulents, herbs, along with mixed desert shrubs, such as creosote bush and burrow bush. Intensive land use management objectives were enacted under the *California Desert Conservation Area Plan, 1980* for protection of the desert environment.

There are 46 Wilderness areas and 9 WSAs located in this zone. Threatened and Endangered (T&E) or sensitive wildlife considerations include the Desert Bighorn Sheep, desert tortoise and Golden Eagle, to mention a few. Habitat Management Areas (HMAs) and Areas of Critical Environmental Concern (ACECs) for T&E wildlife and plant species are major concerns in resource management planning. There are 11 plant species in this zone officially listed as rare, threatened or endangered. Resource managers have a major concern with type conversion of vegetation, owing to invasion of non-native plants, as a result of fire and the impacts on wildlife habitat and plant species. Riparian areas in this zone are limited and thus highly sensitive. Furthermore, over 2 million acres within this zone have been utilized for livestock grazing.

Recreation on public lands in this zone has been on the extreme rise over the past 10 years with a steady increase of visitor use for off-highway vehicles (OHVs), camping, recreational (target) shooting, hunting and hiking.

Wildland-urban interface has become an increasingly more complex issue in this zone. Population growth in the desert areas has risen sharply over the last ten years. Many residences are now located adjacent to public lands where fires are a serious threat to life and property. The increased population, recreational use and climatic factors have created the unique situation of a year-round fire problem in this zone.

FMZ 1 - Fire History/Fire Behavior

The average annual fire occurrence between 1986 and 1995 is 92.3 fires burning an average of 4,501.7 acres per year. The majority of fire activity in this zone occurs in the Stoddard Mountain and Apple Valley areas. Other areas with significant occurrence are the Red Mountain area south of Ridgecrest.

Approximately 90 percent of all fire starts are human-caused. Most ignitions are from equipment use, vehicle fires, shooting, OHVs, campfires and smoking. The highest human-caused fire occurrence is located in the Stoddard Valley OHV area. The remaining 10 percent or less of fire occurrences are lightning caused. This is owing to a lightning selectivity pattern which is sporadic, with no definite pattern.

Wildland-urban interface problems are primarily concentrated in the Apple Valley and Lucerne Valley areas. Throughout this zone the possibility of wildfire threatening single structures is always imminent and thus a significant concern with any fire related incident.

The average annual rainfall for this zone is 4 inches or less and most often occurs during the period of December through March. Green-up generally occurs in mid-March leading to the drying of annuals by May 1. Average summer daytime temperatures range from 90 to 100 degrees. Winds are the most important factor influencing fire behavior in this zone. Prevailing winds are primarily south, southwest. Santa Ana, north and east winds are common during the fall and early spring, and greatly influence fire behavior. A large portion of this zone is flat and rolling with limited access. Accessibility is limited in a number of areas within this zone by steep, rocky terrain, sandy washes and constraints developed through land use planning for protection of sensitive habitats.

Fires in this zone have moderate to high rates of spread due to the flashy fuel types. Fire starts during critical fire conditions, especially coupled with the often occurring high winds, can rapidly change a small fire into a large project fire.

FMZ 1 - Average Annual Fire Occurrence by Size Class:

Size Class	A	B	C	D	E	F+
Number of Fires	51.1	22.8	11.5	3.9	2.3	0.7
Number of Acres	5.3	44.6	387.2	585.6	1,149.4	2,329.6

FMZ 1 - Fire Management & Suppression Resources

There are two BLM fire facilities located within this zone. The Apple Valley Fire Center, which is situated just north of Apple Valley consists of two Type III Engines, one Type IV Engine, one Type II Helicopter, a fourteen person helishot crew, and one Type I water tender. The Salt Wells Fire Station is located near Ridgecrest, housing one Type III Engine.

FMZ 1 - Fire Management Objectives & Constraints

1. Fire Management Objectives:

a. Appropriate management response will generally be aggressive suppression of wildland fires on or threatening public lands. Other wildland fire management responses will be utilized when appropriate, as identified by the specific Fire Management Implementation Plan (FMIP)
b. Extinguish or manage all fires with the least amount of surface disturbance.
c. Extinguish or manage fires by varying the intensity of suppression actions according to conditions occurring at the time the fire starts and as identified in the existing, site-specific FMIP.
d. Use of prescribed fire, as identified in the Phase I Fire Plan(s), is included as a viable fire management strategy and will be used to achieve desired and acceptable levels of burned acres within the management units.
e. The overall acceptable level of performance is to contain most all fires within FMZ-1 to less than 100 acres, under average annual occurrence, 90 percent of the time.

2. Fire Management Constraints:

a. Fires occurring in Wilderness Areas will be managed in accordance with 43 CFR 8560, Bureau Manual 8560 and Wilderness Policy developed by the Desert Managers Group for areas designated Wilderness.
b. Fires occurring in ACECs will be managed in accordance with non-impairment criteria, consistent with the goals developed and described in ACEC Plans, and with minimal disturbance to resource values within ACEC boundaries.
c. Use of surface disturbing equipment, such as bulldozers, is restricted due to the sensitive desert environment. Such equipment can be utilized with Area Manager approval or at the discretion of the Incident Commander, when life and property are threatened.
d. Fire suppression, utilizing mechanized ground equipment, is often naturally restricted in areas of this FMZ owing to steep, rocky and inaccessible terrain.
e. Management of wildfires within designated critical tortoise habitat is defined by the plan for that specific area (West Mojave, Northern and Eastern Colorado Desert, etc.). These Plans, as

approved, prescribe the type and degree of suppression activities that can occur on lands within their specific planning area.

f. Critical Tortoise Habitat / Flat-tailed Horned Lizard Management and Research Areas: Fire suppression may include a mix of the following; 1) aerial attack with fire retardants, 2) crews using hand tools to create firebreaks, and 3) mobile attack engines limited to maintained roads and designated routes. Use of earth-moving equipment (e.g.., bulldozers) is permitted in critical situations, such as where needed to protect life and property. Post-suppression mitigations shall include rehabilitation of firebreaks and closed routes (that were used) employing hand tools.

FMZ 1 - REPRESENTATIVE LOCATION AND PHASE 1 FIRE PLANNING OBJECTIVES CORRELATION & SUMMARY TABLE

Representative Locations & Phase 1 Polygons	PCHA Acres by RL	Phase One Burned Acres per Decade	Phase One Management Objectives	Actual % Success at MEL	Management Objectives Met at MEL
RL - 1 W.C. Mojave		3,000 ac.	100 ac. 90%	93%	Yes
R. - 2 Freeman Cyn. W.C. Mojave		3,000 ac.	100 ac. 90%	89%	Acceptable
RL - 3 Antelope Valley		1,000 ac.	100 ac. 90%	89%	Acceptable
RL - 4 East Kern		1,000 ac.	100 ac. 90%	89%	Acceptable
RL - 5 East & West Mesa Yuha Desert Dos Palmas		1,200 ac. 1,000 ac. 2,500 ac.	100 ac. 90%	89%	Acceptable
RL - 6 Hart		1,000 ac.	100 ac. 90%	89%	Acceptable
RL - 7 Ward Valley Colorado-Bristol		1,500 ac. 2,200 ac.	100 ac. 90%	89%	Acceptable
RL - 8 Colorado-Bristol		2,200 ac.	100 ac. 90%	85%	Acceptable
RL - 9 Fish Lake Owens Lake		1,000 ac.	100 ac. 90%	92%	Yes
RL - 10 N.E. Mojave Afton-Armagosa		1,000 ac. 2,000 ac.	100 ac. 90%	85%	Acceptable

B. FMZ 2 - High Desert Zone

FMZ 2 - Description

This high desert zone, which includes lands administered by the BLM situated at or above the 3,500 foot (msl) elevation, is characterized by sage brush and pinyon-juniper woodlands, though it also contains perennial grasslands, Joshua tree woodlands and other cold tolerant plants. This zone covers approximately 2,132,240 acres within the California Desert. Intensive land use management objectives were established under the *California Desert Conservation Area Plan, 1980* to protect the desert environment. There are 17 designated Wilderness Areas located in the zone, totaling approximately one million acres along with 10 Areas of Critical Environmental Concern (ACEC). Numerous sensitive plant species occur in this zone, of which several are officially listed as Threatened or Endangered. Wildlife T&E species considerations include, but are not limited to, the Desert tortoise, California bighorn sheep (Jawbone area), Peninsular bighorn sheep (San Jacinto-Santa Rosa Mountains) and the Desert bighorn Sheep (Sheep Hole Mountains et al.). Furthermore, 15 allotments covering approximately 2 million acres have been utilized for livestock grazing within this zone.

Resource managers have a major concern in this zone, as well as in FMZ-1, with vegetative conversions as a result of fire and especially the lasting effects on ACECs. Type conversion may have a critical impact on some plant and wildlife species and, in fact, eliminate some completely.

FMZ 2 - Fire History/Fire Behavior

The average annual occurrence between 1986 and 1995 is 28.8 fires within this zone, burning an average of 892.5 acres per year. The majority of fire activity in this zone occurs either in the Clark Mountain area on the east side of the desert or west of Highway 395 from Mojave north to Owens Lake on the west side of the desert.

Approximately 50 percent of all fires in this zone are caused by lightning. Multiple starts following dry lightning storms are common. The remaining 50 percent are human-caused with various ignition sources, such as campfires, shooting and vehicles. Increased recreational use within this zone has been the primary contributor to the human-caused fire problem.

Wildland/urban interface problems are primarily concentrated in the Jawbone Canyon area north of Mojave. Throughout this zone, where scattered rural cabins exist, the possibility of wildfire threatening single structures is always a concern.

Average annual rainfall in this zone is 4 to 5 inches per year at the lower elevations, and 10 inches in the higher elevations. Most precipitation occurs during December through April. Temperatures range from between 60 and 100 degrees during the summer and between 10 and 70 in the winter (November - March). Prevailing winds during the summer are primarily westerly. Strong easterly winds occur in the fall and spring. Steep, rugged terrain limits accessibility into many areas.

Fires in this zone have low to moderate rates of spread and resistance to control from April through mid-July. Control problems increase from July through September and even on into October, during dry years. Large fires do occur in this zone when fuel and weather conditions are conducive to such.

FMZ 2 - Average Annual Fire Occurrence by Size Class:

Size Class	A	B	C	D	E	F+
Number of Fires	17.1	8.8	1.4	0.6	0.6	0.3
Number of Acres	1.8	14.1	45.15	89.2	316.5	425.7

FMZ 2 - Fire Management & Suppression Resources

There are three fire management facilities located within this zone. Hole-in-the-Wall Interagency Fire Station (two Type III Engines, one BLM and one NPS) is located within the Mojave National Preserve, Black Rock Interagency Fire Station (two Type III Engines, one BLM and one NPS) is located toward the southern portion of this FMZ, and the Olancha Fire Station (one Type 3 Engine) which is situated on the border of FMZ-1 & 2 in the northwest portion of the District.

FMZ 2 - Fire Management Objectives and Constraints

1. Fire Management Objectives:

a. Appropriate management response will generally be aggressive suppression of wildland fires on or threatening public lands. Other wildland fire management responses will be utilized when appropriate, as identified by the specific Fire Management Implementation Plan (FMIP)
b. Extinguish or manage all fires with the least amount of surface disturbance.
c. Extinguish or manage fires by varying the intensity of suppression actions according to conditions occurring at the time the fire starts and as identified in the existing FMIP.
d. Use of prescribed fire, as identified in the Phase I Fire Plan(s), is included as a viable fire management strategy and will be used to achieve desired and acceptable levels of burned acres within the management units.
e. The overall acceptable level of performance is to contain most all fires within FMZ-2 to less than 10 acres under average annual occurrence, 90 percent of the time.

2. Fire Management Constraints:

a. Fires occurring in Wilderness Areas will be managed in accordance with 43 CFR 8560, Bureau Manual 8560 and Wilderness Policy developed by the Desert Managers Group for designated Wilderness.
b. Fires occurring in ACEC will be managed in accordance with non-impairment criteria and with minimal disturbance to resource values within the ACEC boundaries.
c. Use of surface disturbing equipment, such as bulldozers, is restricted owing to the sensitive desert environment. Such equipment can be utilized with Area Manager approval or at the discretion of the Incident Commander when life and property are threatened.
d. Fire suppression, utilizing mechanized ground equipment, is restricted by the topography in some areas of this FMZ owing to steep rocky inclines and inaccessible terrain.
f. Critical Tortoise Habitat / Flat-tailed Horned Lizard Management and Research Areas: Fire suppression may include a mix of the following; 1) aerial attack with fire retardants, 2) crews using hand tools to create firebreaks, and 3) mobile attack engines limited to maintained roads and designated routes. Use of earth-moving equipment (e.g.., bulldozers) is permitted in critical

situations, such as where needed to protect life and property. Post-suppression mitigations shall include rehabilitation of firebreaks and closed routes (that were used) employing hand tools.

FMZ 2 REPRESENTATIVE LOCATION AND PHASE 1 FIRE PLANNING OBJECTIVES & SUMMARY TABLE

Representative Locations & Phase 1 Polygons	**PCHA Acres by RL**	**Phase One Burned Acres per Decade**	**Phase One Management Objectives**	**Actual % Success at MEL**	**Management Objectives Met at MEL**
RL - 1 Inyo Mtns. Scodi Mtn. Bright Star Piute Mtns. Middle Knob Kelso Valley		7,000 ac, 1,300 ac.	10 ac. 90%	89%	Acceptable
RL - 2 Inyo Mtns. Coso Range Panamint Mtns. Sierra Canyons Grapevine Cyn. Scodi Mtn. Bright Star Piute Mtns. Middle Knob Kelso Valley		7,000 ac. 4,000 ac. 6,000 ac. 6,000 ac. 1,300 ac.	10 ac. 90%	89%	Acceptable
RL - 3 Kingston Peak Old Womans		1,200 ac. 1,200 ac.	10 ac. 90%	81%	Acceptable
RL - 4 Shadow		1,000 ac.	10 ac. 90%	89%	Acceptable
RL - 5 Colorado Desert		1,400 ac.	10 ac. 90%	89%	Acceptable

C. FMZ 6 - CDF Direct Protection Area

FMZ 6 - Description

The CDF Direct Protection Area is characterized as chaparral brush lands within the wildland-urban interface and includes those portions of the public lands which lie outside the boundaries of the CDCA. BLM administers approximately 400,000 acres of public land in this area, which includes all of Los Angeles and Orange Counties, as well as the western portions of Riverside, San Bernardino and San Diego Counties.

Public lands occur in a scattered fashion, with over 300 separate tracts ranging from .020 acres to 18,000 acres. Few of these tracts are large. The majority are isolated, boulder-strewn areas of a few hundred acres which are topographically steeper than surrounding lands. The largest blocks, encompassing approximately 110,000 acres, are found either in a belt along the Mexican border between Otay Mountain and the Campo Indian Reservation, the In-Ko-Pah/Sawtooth Mountains (McCain Valley) in the southeastern quadrant of San Diego County, or the Beauty Mountain area which straddles the boundary between Riverside and San Diego Counties. There are three National Forests within this zone; the Angeles, San Bernardino and Cleveland.

Chaparral vegetation type covers most of the public lands within the zone. However, there are isolated grasslands, woodlands, riparian areas and coniferous forests. Many sensitive plant species occur within the area, particularly on Otay Mountain in San Diego County, where there are over two dozen sensitive species. Wildlife considerations include three Federal and/or State listed endangered or rare species on or near public lands. These include the Least Bell's Vireo, the Bald Eagle and the Stephens Kangaroo Rat. There are also six Wilderness areas located in this zone totaling approximately 30,900 acres. Livestock grazing occurs on 2 allotments, covering approximately 122,500 acres. Recreation on public lands within this zone is on the rise, with increased visitor-use-days for hiking, hunting, nature study, equestrian and off-road vehicle use.

FMZ 6 - Fire History/Fire Behavior

The average annual fire occurrence between 1985 and 1996 is 30.4 fires, burning an average of 20,046.2 acres per year. The primary cause of fire in this area is human related. The most common causes are abandoned campfires, shooting, fireworks and vehicles. Lightning caused fire occurrence in this zone is low.

The normal seasonal trend is for most of the fires to occur between May and November, with the more intense fires occurring later in the season. The fire weather throughout this fire management zone is typical mediterranean, with high summer temperatures and low relative humidities. Winds are primarily southwest to westerly during the spring and summer. The infamous Santa Ana winds are common during the fall and drastically influence fire behavior.

These chaparral brush lands are known as one of the most fire prone vegetative types and among the worst fuel types for wildland fire suppression. Rates of spread, burning indexes and fire intensity can be extremely high in this zone. Fire starts during critical fire conditions can result in large project fires.

FMZ 6 - Average Annual Fire Occurrence by Size Class:

Size Class	A	B	C	D	E	F+
Number of Fires	7.3	8.5	5.7	2.5	3.1	3.3
Number of Acres	0.8	20.2	206.0	434.9	1,785.2	17,599.1

FMZ 6 - Fire Suppression Resources

There are no BLM, nor Interagency (BLM/NPS) initial attack stations located within this zone. The CDF currently provides suppression protection for public lands within this zone under a Cooperative Agreement. However, fire prevention and fuels management program responsibilities reside with BLM. The State has fire stations, inmate crew camps and airbases located throughout the area. Site specific protection guidelines and suppression standards are agreed to between the BLM and CDF. Owing to the extent of State resources within this zone, there are no plans at this time for force account protection.

There are several important communications sites on Otay Mountain which are highly vulnerable to damage from fires. Given the extreme fire hazard on Otay Mountain, the sites are dependent on an active fire pre-suppression program for their security.

FMZ 6 - Fire Management Objectives & Constraints

1. Fire Management Objectives:

a. Aggressively suppress all wildland fires on or threatening public land to meet allowable burn acreage set by resource managers and management plans with high concern for the wildland-urban interface situation.
b. Increase compliance of BLM resource management objectives on public lands under CDF Cooperative Protection Agreements and insure Agency Representative presence on all reported wildland fires within this FMZ.
c. Extinguish all fires with the least amount of surface disturbance.
d. Extinguish fires by varying the intensity of suppression actions according to conditions occurring at the time the fire starts and at the least cost plus net resource value change.
e. Use of prescribed fire, as identified in the Phase I Fire Plan(s), is included as a viable fire management strategy and will be used cumulatively with wildfire to achieve desired and acceptable levels of burned acres within the management units.
f. All fires, except those within Wilderness, will receive an aggressive initial attack by CDF without regard to intensity, season or location.
g. Provide an aggressive fire prevention effort on public lands within the CDF Direct Protection Area.

2. Fire Management Constraints:

a. An Agency Representative (Fire) and an Environmental Specialist provided by the Resource Area effected will respond to all fires reported in this zone to ensure resource management objectives are being considered by CDF, local agencies and Forest Service, whenever possible.
b. Fires occurring in Wilderness Areas (WA's) will be managed in accordance with 43 CFR 8560 and Bureau Manual 8560 and H-8560-1. Fires occurring in Wilderness Study Areas (WSA's) will be managed in accordance with Bureau Manual 8550 and H-8550-1.
c. Fires occurring in ACEC's will be managed in accordance with non-impairment criteria and with minimal disturbance to resource values within the ACEC boundaries.
d. Use of surface disturbing equipment, such as bulldozers, can only be used with State Director approval in WA's or WSA's and Area Manager's approval in ACECs. Such equipment can be utilized in the remainder of this FMZ at the discretion of the Incident Commander.

IV. CDD PREPAREDNESS PROGRAM

A. Organizational Comparison Chart - Current Organization and Planned Organization (MEL - 5AS)

The following organizational table provides a direct comparison between the FY-97 current organization as presently approved, and the Most Efficient Level (MEL) as planned for this 1998 FMP update.

Table 2
ORGANIZATIONAL COMPARISON CHART

Current Organization for FY-97					**Planned Organization (MEL)**				
BLM FIRE MANAGEMENT	**GRADE**	**TYPE**	**START**	**STOP**	**BLM FIRE MANAGEMENT**	**GRADE**	**TYPE**	**START**	**STOP**
District FMO	GS-12	PFT	01/01	12/31	District FMO	GS-12	PFT	01/01	12/31
Ridgecrest Zone FMO	GS-11	PFT	01/01	12/31	Asst. District FMO	GS-11	PFT	01/01	12/31
Barstow Zone FMO	GS-11	PFT	01/01	12/31	Ridgecrest Zone FMO	GS-11	PFT	01/01	12/31
					Barstow Zone FMO	GS-11	PFT	01/01	12/31
					South Coast Zone FMO	GS-11	PFT	01/01	12/31
NPS FIRE MANAGEMENT					**NPS FIRE MANAGEMENT**				
Joshua Zone FMO	GS-11	PFT	01/01	12/31	Joshua Zone FMO	GS-11	PFT	01/01	12/31
					Mojave Zone FMO	GS-11	PFT	01/01	12/31
					(NOTE: NPS FMO's are not BLM funded)				
BLM FIRE SUPERVISORS									
Olancha Station Manager	GS-07	PFT	01/01	12/31					
Salt Wells Station Manager	GS-07	PFT	01/01	12/31					
Black Rock Station Manager	GS-07	PFT	01/01	12/31					
Apple Valley Station Manager	GS-07	PFT	01/01	12/31					
Hole in Wall Station Manager	GS-07	PFT	01/01	12/31					
BLM TYPE III HELICOPTER					**BLM TYPE II HELICOPTER**				
Crew Leader	GS-07	PFT	01/01	12/31	Helicopter Manager	GS-09	PFT/CS	01/01	12/31
Asst. Crew Leader	GS-06	LT	04/01	10/31	Asst. Manager	GS-08	CS	04/01	10/31
Squad Leader	GS-05	LT	04/15	10/31	Lead Helitack Crewman	GS-07	CS	04/01	10/31
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-05	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-05	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-05	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-05	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-05	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-05	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-05	TP	04/15	09/30

BLM OLANCHA TYPE III ENGINE (E-3634)					**BLM OLANCHA TYPE III ENGINE (E-3634)**				
					Engine Captain	GS-08	PFT/CS	01/01	12/31
Crew Leader	GS-06	LT	04/01	10/31	Engine Operator	GS-07	CS	04//01	10/31
Operator	GS-06	LT	04/01	10/31	Asst.Operator	GS-06	CS	04/01	10/31
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
BLM SALT WELLS TYPE III ENGINE (E-3635)					**BLM APPLE VALLEY TYPE III ENGINE (E-3635)**				
					Engine Captain	GS-08	PFT/CS	01/01	12/31
Crew Leader	GS-06	LT	04/01	10/31	Engine Operator	GS-07	CS	04//01	10/31
Operator	GS-05	LT	04/15	10/31	Asst.Operator	GS-06	CS	04/01	10/31
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31					
BLM SALT WELLS TYPE IV ENGINE (E-3645)					**BLM SALT WELLS TYPE IV ENGINE (E-3645)**				
Crew Leader	GS-05	TP	04/01	10/31	Engine Captain	GS-08	PFT/CS	01/01	12/31
Operator	GS-04	TP	04/15	10/31	Engine Operator	GS-06	CS	04/01	10/31
Crew Member	GS-04	TP	04/15	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31					
BLM BLACK ROCK TYPE III ENGINE (E-3636)					**BLM BLACK ROCK TYPE III ENGINE (E-3636)**				
					Engine Captain	GS-08	PFT/CS	01/01	12/31
Crew Leader	GS-06	TP	04/01	10/31	Engine Operator	GS-07	CS	04//01	10/31
Operator	GS-05	LT	04/15	10/31	Asst.Operator	GS-06	CS	04/01	10/31
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31					
BLM APPLE VALLEY TYPE III ENGINE (E-3637)					**BLM APPLE VALLEY TYPE III ENGINE (E-3637)**				
					Engine Captain	GS-08	PFT/CS	01/01	12/31
Crew Leader	GS-06	LT	04/01	10/31	Engine Operator	GS-07	CS	04//01	10/31
Operator	GS-05	LT	04/15	10/31	Asst.Operator	GS-06	CS	04/01	10/31
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31					

BLM APPLE VALLEY TYPE III ENGINE (E-3638)					**BLM APPLE VALLEY TYPE III ENGINE (E-3638)**				
					Engine Captain	GS-08	PFT/CS	01/01	12/31
Crew Leader	GS-06	LT	04/01	10/31	Engine Operator	GS-07	CS	04//01	10/31
Operator	GS-05	LT	04/15	10/31	Asst.Operator	GS-06	CS	04/01	10/31
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31					
BLM HOLE IN WALL TYPE III ENGINE (E-3639)					**BLM HOLE IN WALL TYPE III ENGINE (E-3639)**				
					Engine Captain	GS-08	PFT/CS	01/01	12/31
Crew Leader	GS-06	TP	04/01	10/31	Engine Operator	GS-07	CS	04//01	10/31
Operator	GS-05	LT	04/15	10/31	Asst.Operator	GS-06	CS	04/01	10/31
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-04	TP	04/15	09/30
Crew Member	GS-04	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31	Crew Member	GS-03	TP	04/15	09/30
Crew Member	GS-03	TP	05/01	10/31					
BLM APPLE VALLEY TYPE I WATER TENDER (WT-3690)					**BLM APPLE VALLEY TYPE I WATER TENDER (WT-3690)**				
Operator	GS-05	TP	05/01	10/31	Operator	GS-07	PFT/CS	04/01	09/30
BLM FIRE PREVENTION TECHNICIAN					**BLM FIRE PREVENTION/FUELS TECHNICIANS**				
South Coast Zone FPT	GS-05	TP	05/01	10/31	Ridgecrest Zone FPFT	GS-07	CS	04/01	10/31
					South Coast Zone FPFT	GS-07	CS	04/01	10/31
					Barstow Zone FPFT	GS-07	CS	04/01	10/31
BLM DISPATCHERS					**BLM DISPATCHERS**				
Supervisory Dispatcher		2 wm			Supervisory Dispatcher		2 wm		
Dispatcher		2 wm			Dispatcher		2 wm		
Dispatcher		2 wm			Dispatcher		2 wm		
Dispatcher		2 wm			Dispatcher		2 wm		
Dispatcher		2 wm			Dispatcher		2 wm		
Dispatcher		2 wm			Dispatcher		2 wm		
Dispatcher		2 wm			Dispatcher		2 wm		
BLM ADMIN.. SUPPORT					**BLM ADMIN.. SUPPORT**				
District Admin.. Support		1 wm			District Admin.. Support		2 wm		
District Radio Tech.		2 wm			District Radio Tech.		2 wm		
District Personnel Specialist		1 wm			District Personnel Specialist		2 wm		
District Budget Analyst		1 wm			District Budget Analyst		1 wm		
District Pilot		2 wm			District Pilot		2 wm		
District Management		1 wm			District Management		1 wm		

					Ridgecrest Zone Admin.. Support		2 wm		
					Barstow Zone Admin.. Support		2 wm		
					Mojave Zone Admin.. Support		2 wm		

B. CDD Preparedness Program

CDD Preparedness Program Organization

The CDD FMP at MEL (5AS) identifies the following staffing level needed to accomplish the District's fire management goals:

- CDD will fund and staff one District FMO, one Asst. District FMO, and three Zone FMO's.
- CDD Type III engines will be staffed with a PFT/CS Engine Captain (GS-08), Career Seasonal Engine Operator (GS-07), Career Seasonal Asst. Engine Operator (GS-06), and four seasonal fire fighter positions. This will allow a full seven day a week engine staffing level.
- CDD Type IV engines will be staffed with a PFT/CS Engine Captain (GS-08), a Career Seasonal Engine Operator (GS-06), and three seasonal fire fighter positions. This will allow a full seven day a week engine staffing coverage level.
- This staffing design provides for 7-day Zone Duty Officer coverage required for safe fire management and adherence to our 1997 Manning and Action Guide. This staffing standard also enables CDD to sustain 7-day manning of engines and aircraft as required by our BLM California State-wide staffing standards.

CDD Engine Crew Staffing Standards

- Engine crew size in the California Desert is designed around safety, type of engine and providing seven day-a-week coverage on the engines. Seven day-a-week coverage capability is an important factor with the increased wildland/urban interface problem and expanding recreation use. Approximately 80% of all fires in the California Desert are human caused.

Engine Type	Crew Size	Minimum Daily Coverage
Type III	5 effective daily	7 day
Type IV	3 effective daily	7 day

Helicopter Operations

- California Desert helicopter operations will consist of a medium, Type II, helicopter with a 10 person flight crew (including a PFT helicopter manager, a Career Seasonal assistant manager and a lead helitack crew leader). The Type II Helicopter has a power to weight ration capable of providing a full crew for Initial Attack to the incident at all times, as identified and analyzed in the IIAA model. The crew will be cross trained in Initial Attack and Helitack operations, and rappel qualified. Through the FMP process we have assessed cost effectiveness of the rappel program, as with the other fire suppression tools. Travel time and production rates for rappel operations connected with a Type II helicopter are analyzed in the IIAA. The 10-person flight crew size would provide a minimum coverage of 7 personnel per day, seven days-a-week. This allows for an 8

person Initial Attack Flight Crew on the helicopter and 2 Helitacks on the two helicopter support vehicles (Helitender and Crew Van). Functionally, this permits 8 firefighters to be dropped-off for initial attack on a single fire or multiple drop-offs of two or more personnel in multiple fire situations. In addition to the flight crew, a medium helicopter carries on-board a collapsible 450 gallon bucket.

Support Vehicles

- The support vehicles in the Desert Fire Management Program are an important aspect for its functional operation. There are 16 total support vehicles in the fire program; 11 support/project, 2 helitack, and 3 fire prevention.
- These vehicles support the fire management staff; DFMO, ADFMO, and three BLM Zone FMOs. The fire staff vehicles enable the staff to inspect fire stations, respond effectively to fire on federal land, as well as in CDF Direct Protection Areas, provide logistical support and attend numerous cooperator planning and operational meetings. The remaining vehicles are used as fuels management project vehicles.
- The 2 helitack support vehicles include a crew cab helitender and a 9-person carrier. The helitender carriers all helitack support equipment and Initial Attack gear, and is utilized as the heliport communications center for the helicopter operations.
- The 3 Fire Prevention vehicles are pick-ups with 100 gallon slip-on units. They allow the Fire Prevention Technicians to meet travel needs for fire prevention presentations, patrolling, assisting on projects, while providing limited Initial Attack capability.

BLM and NPS Interagency Management and Preparedness Program Efficiencies

The CDD fire preparedness program is typified as a highly cooperative NPS/BLM fire management organization, with the inherent staff expertise of both agencies, provides for enhanced management capability. Specific efficiencies are listed below:

- Continuum of wildland incident management - In the general area of fire suppression both agencies share relatively common strategies and tactics. However, subtle differences in fire suppression strategies can and do exist between some NPS wilderness areas as compared to adjacent BLM management areas. A combined fire management organization provides a highly coordinated level of operational skill and expertise to ensure that incident management objectives of both agencies are met as wildfires move across agency boundaries.
- Common understanding of agency strategies and tactics - Standardized and bilateral understanding of agency specific fire management strategies and suppression tactics greatly improve implementation capability, augmenting ground operation efficiencies and firefighter safety.
- Single Incident Command structure - The ability to implement a broad Fire management strategy is substantially enhanced by combining the command staff and workforce of both agencies in a manner that optimizes each agency's strategic and tactical strengths and skills.
- Joint NPS/BLM training and utilization of special skills - Significant value is achieved, while costs are reduced, in training and working together in a single, integrated organizational structure. Furthermore, efficiencies will increase with greater training in special skills that both agencies bring into the combined organization.

- Incident response, move-up and cover - Efficiencies in initial response, move-up and cover are realized when both agencies function as a single fire organization. In part this is because, when time is of the essence, it is less complicated to coordinate and implement since these are pre-agreed and accepted practices, instead of involving the permission/coordination process between two autonomous agencies.
- Consistent policy, procedures and equipment standards - Consistency in policies, procedures and equipment standards, coupled with the joint knowledge gained through shared in-service training, are substantially more effective than typical encounters of "separate agencies" involved in joint operations with procedural and technical differences.
- Single point coordination, communication and equipment support operations - To implement more complex fire management strategies demands a greater need for close coordinated fire team training, including shared equipment support operations.
- Large pool of personnel - Provides for more efficient training with adequate fire station coverage.

BLM & NPS Joint Preparedness Program Cost Efficiencies

- BLM/NPS fire management and fire administrative position consolidation avoids position redundancy.
- Savings in BLM/NPS fire administrative/support activities that are converted into providing a higher level of fire field services.
- Consolidation of training and certification process will eliminate substantial duplication and result in cost savings.
- Joint NPS/BLM funded capitol improvements and facility projects allow both agencies to equally benefit from the shared use of needed improvements and facilities, while ameliorating individual cost.

V. CDD FIRE PREVENTION & EDUCATION PROGRAM

The CDD will implement the Wildfire Prevention Workload Analysis (PWA2) as an integrated element of the District's fire management program through the Fire Management Activity Plan (FMAP). CDD's wildfire prevention program is primarily focused on preventing human caused ignitions which pose the greatest potential to cause unacceptable natural resource damage or result in life and/or property losses.

Risks (Ignitions): Historically, CDD has experienced a pattern of very high recreational and visitor use on Bureau lands, as well as other other federal & private lands adjacent to CDD's public lands. Recreational visitor days, on public lands alone, have increased from 16 million visitor days in 1978 to over 20 million visitor days in 1998. This relatively high amount of visitor and recreation use has resulted in a correspondingly high rate of human caused fires
The District's ten year statistical fire average shows that human caused fire's account for approximately 88% of CDD's total fires, with lightning fires accounting for the remaining 12%. CDD statistical average also indicates that arson accounts for approximately 12% of all human caused fires. The human risks with the highest priority are in urban interface/intermix areas, power lines, equipment use, and recreational use.

Hazards (Fuels): We utilize the term "hazard" to describe the relationship between fuels and topography in a given compartment and how fire behavior will affect the values in each area. Within CDD, we base each compartment's hazardous fuels on the NFFL Fuel Model rating system overlaid on a NFDRS slope class scale. A hazard value component of High, Medium, or Low, is then assigned to each compartment based on the fuel model and the type of slope which best represented the majority of fuels whose ignition would threaten the loss or damage of the values in that given compartment. CDD's fuels hazard matrix is as follows:

Fuel Model #1 Annual Grass
Fuel Model #2 Desert Scrub
Fuel Model #4 Chaparral
Fuel Model #5 Black Brush

SLOPE CLASS

Fuel Model	**1** (0-25%)	**2** (26-40%)	**3** (41-55%)	**4** (56-75%)	**5** (75%+)
FM #1	Low	Medium	High	High	High
FM #2	Medium	High	High	High	High
FM #4	Medium	High	High	High	High
FM #5	Medium	High	High	High	High

A compartment with a high hazard rating will be appraised for fuels management treatment potential. However, those compartments identified with high values, high risks and high hazards (HHH compartments))will receive first priority for aggressive fire prevention activities and hazardous fuels reduction projects.

Values: Are defined as social/political values, natural resources, and developed areas, where loss or destruction from unplanned wildland fire would be unacceptable. Protection of human life is the first priority in wildland fire management. Property and natural/cultural resources jointly become the second priority with protection decisions based on values to be protected and other considerations.

Values were identified and viewed as areas where unplanned wildland fire would not be acceptable in each compartment. The highest priorities are in urban interface/intermix areas, the international border area between Mexico and the U.S., and T&E habitat for desert tortoise and bighorn sheep.

Historical Fire Occurrence: CDD's ten year cumulative fire statistics show a total of 1,378 fires for 248,000 total acres burned. Human caused fires represent 88% of those fires and burned 87% of the acreage. The next chart shows statistical fire data from PCHA for each FMZ by specific fire cause, and by acres burned rounded to the nearest thousand.

California Desert District 1987 - 1996
FIRES (#)/ ACRES BURNED (ROUNDED TO THE NEAREST ,000)
BY STATISTICAL CAUSE

FMZ	Litng	Equip	Smokg	Camp fires	DebBr	RRoad	Arson	Child	Misc	Total
1 Annual ~s	60 14,000	195 5,000	61 4,000	25 2,000	48 3,000	13 176	102 2,000	14 200	330 12,000	848 40,000
Chapa-rral	55 3,000	67 1,000	2 986	5 1,000	6 100	3 156	15 11,000	6 720	89 4,000	249 9,000
6 CDF DPA	50 14,000	34 74,000	7 10,000	36 8,000	14 2,000	1 132	49 26,000	12 7,000	79 53,000	282 199,000
Total# ====== **Acres**	**165** **31,000**	**296** **80,000**	**70** **15,000**	**66** **10,000**	**68** **5,000**	**17** **0**	**166** **29,000**	**32** **7,000**	**498** **69,000**	**1,378** **248,000**

By interpreting the statistical data displayed for each FMZ , the following list indicates the primary causes from human ingnited fires, in statistical order, starting with the most common ingnition cause:

- Miscellaneous: 498
- Equipment use: 296
- Arson fires: 166
- Smoking: 70
- Debris burning: 68
- Campfires: 66
- Children: 32
- Railroads: 17

Identification of Priority Areas: Through the 1997 California Desert District Prevention Workload Analysis (PWA2), 39 separate compartments have been established throughout the District. Of these the CDD has identified 8 compartments as High Risk, High Hazard, & High Values (HHH) compartments. These "HHH" compartments have been selected as priority areas for intensive fire prevention efforts, hazard reduction activities, and fire educational efforts. The CDD-HHH priority compartments are as follows:

Barstow:	Desert Front	FMZ 2
Ridgecrest:	Red Mtn.	FMZ 1
	Randsburg	FMZ 1
	Little Lake	FMZ 1
Palm Springs:	Border/Otay	FMZ 6
	McCain Valley	FMZ 6
	South Coast	FMZ 6
Needles:	Mountain Pass	FMZ 2

CDD Fire Prevention and Education Program Strategies & Objectives: Historic CDD fire prevention strategies and program objectives have focused on fire education and public contacts. These general fire prevention objectives were originally developed from the 1991 Wildfire Prevention Plan, and later refined in the 1997 PWA2 Update. The 1997 program analysis provided each Field Office a thorough review of their respective prevention compartment objectives. Prevention program strategies will specifically target activities that result in human caused ignitions and have a high potential of being prevented, while possessing the greatest potential to cause unacceptable damages and losses.

CDD Fire Prevention/Education Organization: The 1997 PWA2 process identified two Career Seasonal fire prevention/education technician positions in the Barstow and Ridgecrest Field Offices, and one seasonal fire prevention technician position in the Palm Springs Field Office to establish and implement a more effective fire prevention & education program in the priority compartment/areas within CDD. The CDD fire prevention organization will function under a decentralized zone concept to enhance program effectiveness. Prevention program direction, funding and oversight will be the responsibility of the District FMO. Prevention program operational and administrative responsibilities at the field office level will be implemented under the respective Field Office Fire Management Officers.

CDD Prevention/Education Program Funding: The 1997 PWA2 identified a CDD fire prevention program funding target of $114,000 for both labor and non-labor functions.

This funding target included personnel workmonth costs, vehicle F.O.R, mileage, travel, per diem, training, and fire education supplies/materials. These proposed prevention positions will be utilized for fire investigation, fire information, public outreach, smoke management, prescribed fire, and general fire prevention. Many CDD fire prevention program objectives and responsibilities are shared between the District and Field Offices.

A specific CDD Fire Prevention and Education Program description, by office, is as follows:

California Desert District: Within CDD, there are several types of prevention efforts geared towards the reduction of human caused fires. The program has primarily focused on fire prevention education activities with interagency cooperators (ie. High Desert Fire Prevention Association). CDD also participates extensively in traditional fire prevention activities, such as school programs, fairs, parades, rodeos with the use of the Fire Prevention Team/BLM Buddies and the use of Smokey Bear, including Smokey & the Sports series (Pros, American Cowboy, etc). High visible patrols on high use holidays & weekends, education on campfire & fire use, prevention sign maintenance, implementation and enforcement of fire restrictions during periods of high fire danger, and close coordination with BLM law enforcement and rangers, are also implemented as part of the District-wide fire prevention program.. The California Desert District is also active in fire trespass investigation and fire cost recovery actions on all appropriate fires. Each CDD Field Office is responsible for their respective fire prevention program, while maintaining close prevention program coordination with the Fire Management Officer in the District Office.

Barstow Field Office: The Barstow Field Office fire prevention program currently consists of a few inter-agency fire prevention school programs, patrols by law enforcement rangers, and maintenance of fire prevention signs in campgrounds. The Barstow F.O. is planned for a long term-career seasonal Fire Prevention and Education Technician position in FY-99, as identified in the 1998 FMP update. The Barstow FMO currently relies on his seasonal work force to maintain a fire prevention presence during fire season.

Ridgecrest Field Office: The Ridgecrest Field Office fire prevention program currently consists of a few inter-agency fire prevention school programs, patrols by fire suppression personnel and BLM rangers, and maintenance of fire prevention signs in campgrounds. The Ridgecrest fire prevention program has focused mainly on prevention education through inter-agency programs such as the High Desert Fire Prevention Association. The Ridgecrest F.O. is planned for a long term-career seasonal Fire Prevention and Education Technician position in FY-99, as identified in the 1998 FMP update. The Ridgecrest FMO currently relies on his seasonal work force to maintain a fire prevention presence during fire season.

Palm Springs/South Coast Field Office: The Palm Springs Field Office fire prevention program consists of patrols through the Law Enforcement Rangers, public contacts through community meetings stressing hazard reduction and prescribed burning, and Interagency coordination with CDF and USFS in the San Bernardino, Riverside and San Diego County areas. The South Coast unit of this field office contains the U.S./Mexican Border area, which has been the focal point of significant fire prevention activities directed at the high number of human caused fires, resulting from illegal aliens crossing the border through the BLM lands around the Otay Mtn. WSA. CDD and the Palm Springs Field Office also participates in the Border Agency Council, which sponsors a variety of interagency fire prevention program targeting illegal immigrants that travel across public, private and forest system lands. Palm Springs F.O. has identified a long-term career seasonal fire prevention technician to specifically focus on this highly visible, interagency fire prevention program.

Needles Field Office: The Needles Field Office fire prevention program relies solely on fire program personnel and law enforcement rangers patrols at high use areas during periods of very high/extreme fire danger. Due to relatively low visitor use impact, no fire prevention positions are proposed at this field office.

Hazardous Fuels Reduction Strategy: . The reduction of hazardous fuels through prescribed burning and mechanical treatment is a high priority in CDD. Each Field Office Fire Management Officer is committed to developing new and innovative ways to educate the public on smoke management, prescribed fire use, and the new Federal Fire Policy. CDD's ability to successfully implement a large scale hazardous fuel reduction program is highly dependent on BLM's ability to recruit and solidify pubic support for prescribed burning through pubic education and community involvement workshops. CDD's fire prevention/education personnel efforts will be primarily focused on this type of fire education. (Refer to Fire Use and Fuels Management Narrative, Chapter VI)

The staffing plan below shows the 1998 FMP proposed fire prevention organization planned for each CDD Field Office:

Field Office Fire Prevention and Education Staffing Plan	Career Seasonal - Long Term (CSLT) Prev. & Edu. Tech.	Seasonal Fire Prevention & Education Tech.	Fire Prevention Vehicles
Barstow Field Office	1 Fire Prevention Tech GS-6/7		1
Ridgecrest Field Office	1 Fire Prevention Tech GS-6/7		1
Palm Springs/South Coast Field Office	1 Fire Prevention Tech GS-6/7		1
Needles Field Office			

VI. FIRE USE AND FUELS MANAGEMENT PROGRAM

The CDD historic five year annual average is 0 projects treating 0 acres per year.

In response to the new Hazardous Fuels Reduction Program and the Federal Fire Policy, CDD has significantly increased its interagency efforts in developing fuel management projects. In addition, CDD is also developing a MOU and Smoke Management Plan with the South Coast APCD, and will coordinate and report prescribed burns and smoke estimates through the use of the PFIRS program.

Each Field Office is responsible to plan and implement their respective fuels management projects.

The CDD Phase One Fire Management Plan has recognized a need for 4,100 acres to be treated annually. Of those, 3,100 acres are to be prescribed burned, while 1,000 acres are targeted for mechanical treatment.

With fuel management treatment priorities based on risks, hazards, and values, CDD fuel management treatment projections have been refined to develop more accurate project costs. These cost totals are listed under the CDD Average Annual Projects column. Cost figures are based on District implementation costs of personnel and equipment resources needed to safely accomplish previous prescribed burns and mechanical treatment projects. CDD's annual project accomplishment and cost projection formula identifies a target of 4,100 acres per year at an estimated total project implementation cost of $205,000 or $50/acre.

A vacant FMO position at the Palm Springs/South Coast Field Office is identified to be funded by the Hazardous Fuels Reduction Subactivity.

Average Annual Fuels Management Workload By CDD Field Office:

Treatment Type	Barstow F.O.	Needles F.O.	Ridgecrest F.O.	Palm Springs South Coast F.O.
Mechanical Fuels Projects per year	1	1	1	2
Acres	200	200	200	400
Prescribed Burns per year	1	1	1	5
Acres	200	200	200	2500
Acres per year-Total	400	400	400	2900
Project Cost per year-Total	$20,000	$20,000	$20,000	$145,000

CDD Prescribed Fire and Fuels Management Workload Analysis

1.	Number and size of Projects		Annual Average Workload
a.	Number of prescribed fire projects:		8
b.	Number of acres:		3,100
c.	Number of Mechanical Treatment Projects:		5
d.	Number of acres:		1,000
2.	Staffing (Fuels Planners)	#2823 WMs	#2810 Wms
a	Number of PFT positions:	10	
b.	Additional WMs for Existing WAE:		36
c.	Total 2823 WM cost (not including implementation): (WMs x AWMC of $5,000)	$ 50,000	
	Total 2810 WM cost additional for non-PFT positions: (WMs x AWMC of $2,800)		$100,800
3.	Training (10 classes @$1000 each):	$ 10,000	
4.	Equipment one time cost:		$ 25,000
5.	Implementation		
a.	Average annual implementation cost for prescribed fire projects:	$155,000	
b.	Average annual implementation cost for mechanical fuel treatment projects:	$ 50,000	
6.	Total items 2c, 3, 5a, and 5b:	$265,000	
a.	Administrative cost, 5%:	$ 13,250	
b.	Total 2823 cost:	$278,250	
7	Sum items 2c and 4 **Total 2810**	$125,800	

VII. AVIATION PROGRAM

The California Desert District (CDD) though its fire organization is directly responsible for wildfire suppression on approximately 10 million acres of public land in southern California. However, through agreements and Memorandums-of-Understanding (MOU's) with other Federal agencies and the State of California, the CDD provides fire protection on an almost equal amount of interspersed or adjacent private lands. Much of this land is remote and has extremely limited access. In fact, access by ground transportation is frequently difficult and time-consuming, if a vehicular passageway is even possible at all. Additionally, the 10-year annual average of fire occurrence in the CDD is 152 fires and 25,439 acres burned, making it one of the most active BLM fire-fighting organizations in the lower 48 States.

The CDD's fire program need for a fixed-wing aircraft is based primarily on three driving issues; fire occurrence, size of the District and the difficulties of access to most areas. For the fire program the primary mission of the CDD's aircraft is to provide a rapid response to wildfires and, once there, then to server as a communications observation platform for assessing fire behavior and fire potential, to direct crews and equipment, to provide management support for the incident commander and ground crews, and to map the incident. The aircraft also can and does serve as a platform for air attack with all its incumbent responsibilities, including direction air tanker traffic, helicopter coordination, air-to-air and air-to-ground communication, or in other words serving as an airborn air traffic control.

The CDD has used fixed-wing aircraft in its fire operations for approximately 20 years. Yet the role and use of aircraft in the CDD has changed and broadened in scope. While fire suppression continues to be one of its important missions, improved tactical procedures have increased utilization, leading to a greater and more integral role in the District's fire operations. The aircraft's worth, as used in initial and extended attack as an observational, air attack and mapping platform, gathering fire intelligence and assisting in strategic decisions, continue to be invaluable for the safety of our crews as well as resources protection, as demonstrated at each and every incident to which it is sent. But it has also proven to be invaluable for fire prevention and detection patrols, as well as a fire reconnaissance aircraft for District cooperators.

Given the expanse of the CDD with its many remote areas, large local population, heavy public visitation and the increasingly complex fire protection and law enforcement missions, a qualified and highly proficient pilot for these operations, funded 80 percent by law enforcement and and other sub-activities, and 20 percent by fire use and management (2810), is necessary.

Non-IIAA Aviation needs: District Pilot - 2 WM's (subactivity 2810)

VIII. CDD MOST EFFICIENT LEVEL (MEL)

The Interagency Initial Attack Analysis (IIAA) was completed to find the most efficient, effective fire management organization for the California Desert. This was accomplished by comparing relative changes in suppression costs and net resource value changes resulting from changes in Initial Attack force usage.

To find the most effective force for the Desert it is necessary to develop "options." Options equate to budget levels, utilizing different force mixes and base locations which have been analyzed against 10 years of fire data (1986-1995).

The following table displays the output run of 15 different options, which were then compared to the existing current situation (Option 001):

Option	Budget	Suppression Costs (Supp)	Net Value Change (NVC)	Cost + NVC	Acres Burned
5BR	$2,172,014	$517,311	$1,493,664	$4,172,431	6,489.58
009	$2,172,014	$521,377	$1,494,600	$4,187,991	6,490.04
5AS	$2,172,014	$524,478	$1,505,184	$4,201,676	6,580.24
041	$2,172,014	$538,557	$1,503,078	$4,213,649	6,566.18
5SW	$2,223,693	$516,334	$1,495,177	$4,234,839	6,490.32
5AW	$2,287,402	$521,034	$1,493,465	$4,301,901	6,476.97
005	$2,324,695	$521,034	$1,493,465	$4,339,194	6,476.97
013	$2,494,532	$507,172	$1,388,969	$4,390,673	6,029.39
5SA	$2,180,561	$550,613	$2,318,791	$5,049,965	9,833.56
058	$1,621,536	$606,962	$2,971,533	$5,200,031	13,176.44
002	$2,334,956	$554,396	$2,332,083	$5,221,435	9,890.28
5H3	$2,210,359	$631,721	$2,436,686	$5,278,766	10,624.53
044	$1,774,218	$625,759	$2,943,862	$5,343,839	12,942.60
5AV	$1,885,756	$599,431	$2,878,388	$5,363,575	12,452.24
022	$2,055,593	$542,824	$2,832,836	$5,431,253	12,032.55
001	$2,220,620	$641,923	$2,915,910	$5,778,453	12,712.24

The Most Efficient Level (MEL) is option 5AS. Initially, several base budget options were conducted utilizing the personal computer based IIAA program testing differing force mixes (i.e.,

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The Most Efficient Level (MEL) is option 5AS. Initially, several base budget options were conducted utilizing the personal computer based IIAA program testing differing force mixes (i.e.,

replacing engines with a Type II helicopter demonstrated that a Type II helicopter is one of the most efficient suppression tools in meeting net value changes in resources and suppression costs, as outlined in the Desert FMP objectives). Since an engine/helicopter mix provides the most efficient protection, dispatching options were then examined utilizing projected Fire Intensity Levels (FIL's). In addition, engine force mixes and sizes were run to determine the best option for the California Desert District.

After finding the best budget run, several higher and lower budget alternatives were addressed utilizing fire resources. Suppression costs and net resource costs were collected for each alternative with a summary listing of the expected annual number of fires and acres burned.

In review of resource management and fire objectives, acres burned, and net value change within the California Desert the preferred option 5AS was selected. Option 5AS has a fire program budget of $2,172,014 for an acreage loss of 6,580.24 acres.

A. MEL Selection (Option 5AS)

The Desert FMP analysis is an accurate reflection of our effort to identify the most cost effective Fire and Aviation Management Program for the California Desert District wildlands.

After careful review and analysis we have selected the Most efficient Level (MEL) and the Least Cost Level (LCL) for Fire Protection on federal lands. Our preferred and recommended fire program identifies option 5AS. At this level, approximately 90% of all fires in FMZ-1 would be suppressed at or below resource management objectives of 100 acres and approximately 90% of all fires in FMZ-2 would be suppressed at or below resource management objectives of 10 acres.

Option 5AS provides for a fire organization of 13 PFT personnel, 20 career seasonal personnel and 33 Seasonal Firefighters. Engine NUS would remain the same; 7 BLM Type III engines and 1 water tender (BLM). This Option relocates one Type III engine to the Apple Valley Fire Station, from the Salt Wells Fire Station, leaving a Type IV (light) engine in-place at Salt Wells for efficiency in meeting Desert FMP objectives. The Type III light helicopter operation, as utilized during the 1996-1998 fire years, will be replaced with one Type II medium helicopter.

Option 5BR moves a Type III (heavy) engine from Black Rock Fire Station to Apple Valley Fire Station and replaces it with a Type IV (light) engine from Salt Wells Fire Station. This option is not technically viable as no consideration is given to the political consequences, including the potential loss of cooperation for our cooperators (i.e., San Bernardino Nation Forest, California Department of Forestry, and National Park Service).

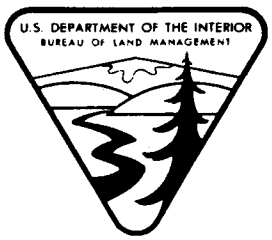
Likewise option 009, moving a Type III (heavy) engine from Black Rock Fire Station to Apple Valley Fire Station, or Option 041, moving a Type III (heavy) from Hole-in-the-Wall Fire Station to Apple Valley Fire Station, are also not technically viable options as no consideration was given to the political consequences and the loss of cooperation from our cooperators.

Option 5SA, which would move the Type IV (light) engine instead of a Type III (heavy) engine from Salt Wells Fire Station to Apple Valley Fire Station, shows a significant additional loss of approximately 3,500 acres and $900,000.

Therefore, the selection of option 5AS represents the most cost effective and politically acceptable program that is realistically available to BLM, while satisfying overall management

objectives. In summary, option 5AS, when compared to our 1994 FMAP MEL, provides for a higher level of service and a more efficient fire management program at approximately the same total cost.

May 22, 1998



United States Department of the Interior
Bureau of Land Management
California Desert District

Phase I
Fire Management Plan

1998

Categories

To produce the final Desired Resource Management Map, four wanted resource conditions or management categories were used. These are:

Category A: Where wildland fire is not desired at all.

Category B: Where unplanned wildland fire will likely cause negative effects, but these effects may be mitigated or avoided through fuels management, prescribed fire, or other strategies.

Category C: Where fire is desired to manage ecosystems, yet there are constraints because of the existing vegetation condition owing to fire exclusion.

Category D: Where fire is desired and there are no constraints associated with resource conditions, or social, economic, or political considerations.

Appropriate Suppression Response (ASR)

From the aforementioned Categories the following definitions were developed by our fire management experts, the Desert and Zone Fire Management Officers (FMOs) to include, by definition, Appropriate Suppression Response (ASR) scenarios that reflect successful suppression strategies. These are:

ASR Category A.

Use full, sustained and aggressive suppression actions to contain all fires within the first burning period. For suppression of fires that elude containment objectives an appropriate action plan will be developed based upon a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on protection of life and property, reducing social/economic losses and minimizing suppression costs, rehabilitation costs, and resource/environmental damages (use of dozers and air tankers is approved).

ASR Category A_1.

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90% of the time. However, initial attack will normally not include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

ASR Category B_1.

Use full, sustained and appropriate suppression actions to contain all fires during the first burning

period. Initial attack may include air tankers and/or bulldozers to protect life and private property. Strategy for suppressing fires that escape containment during the first burning period will be based upon reducing economic losses, private property damages, resource losses, suppression costs, rehabilitation costs, and environmental damages (Wildland Fire Situation Analysis). Suppression costs, rehabilitation costs and resource/environmental damages will be minimized, commensurate with property values. The future need for aggressive full suppression efforts may be avoided through fuels management, prescribed fire or other strategies which reduce or eliminate the risk to life and property.

ASR Category B_2.

Use an appropriate mix of initial attack suppression resources coupled with relevant attack strategies to achieve containment objectives. A combination of direct and indirect attack strategies should be utilized to reach containment within the first burning period, maximizing cost effectiveness of suppression activities. Burned acreage does not necessarily need to be minimized below 100 acres. Natural barriers, breaks in fuel continuity, roads/trails and predetermined control pints will be considered and utilized, where appropriate, in determining suppression actions to meet containment/resource objectives. Initial attack normally should not include air tankers. Furthermore, bulldozer use is prohibited unless needed to protect life and property. Suppression of those fires that escape containment objectives will be based upon an appropriate action plan developed from a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on reducing social/economic losses and minimizing suppression costs, rehabilitation costs and resource/environmental damages.

ASR Category C.

Use an appropriate mix of initial attack suppression resources with suitable tactics to meet resource and confinement objectives within established constraints (e.g., decadel allowable acreages, etc.). Line construction and burning out may be done to complete confinement objectives, if natural barriers and fuel conditions do not achieve containment. Fires burning under these conditions will receive appropriate attention by qualified personnel to insure confinement, until the fire is declared out.

ASR Category D.

This is the lowest level of fire suppression. Fires in this category are generally self-contained and pose little or no threat to human life or resources. Line construction and burning-out may be done to complete the confinement if natural barriers do not surround the fire. Fires burning under these conditions will receive, at a minimum, daily visual inspection by qualified personnel (rated Type III Incident Commander or higher) until the fire is declared out. The fire may be inspected from aircraft, at the fire site, or from strategic vantage points.

Fire Prevention Program

It is recognized within the fuels managmentment strategy of each ASR that a wildfire prevention program is an integral part of fire management. Therefore, based on a Prevention Workload Analysis

(PWA2), a wildfire prevention program will be continued. The thrust of this program is directed toward ignitions that are human caused and have the highest potential to avert, while possessing the greatest potential to cause unacceptable damage or losses.

CA-065 **RIDGECREST FIELD OFFICE**

A. Desired Resource Management

1. Fish Lake Valley Polygon

Elevations in this polygon range from 3,500 feet to 8,800 feet. Most of the terrain is gently sloping valley bottoms. The valleys are generally surrounded by steep sloped mountains on all sides. An exception is the south end of Fish Lake Valley where the elevation increases more gradually into the Sylvania Mountains. There are approximately 18,000 acres of public lands in this polygon.

Average precipitation in this polygon is estimated to ranges from 3 inches at the lowest elevations to near 15 inches along the ridges with a considerable year to year variation. Portions of the precipitation may come from summer thunderstorms. Snow is not uncommon in the winter.

There are a number of different plant communities represented in this polygon. Most of this polygon is dominated by shrub communities. Shrub species such as White sage or Winter fat (*Kraschenninnikovia lanata*) Water brush or Spiny hopsage (*Grayia spinosa*), Budsage (*Artemesia spinescense*), Nevada joint fir (*Ephedra nevadensis*), Cooper Goldenbush (*Ericameria cooperi*) Greasewood (*Sarcobatus vermiculatus*) and salt brush (*Atriplex spp.*) comprise most of the valley bottoms. The lowest elevations in Eureka Valley contains a Creosote bush (*Larrea tridentata*) scrub community. There is also some Creosote bush in Fish Lake Valley. The vegetation on the slopes and at the higher elevations consist of Single leaf pinyon pine, (*Pinus monophylla*), and/or a shrub community consisting of Big sage (*Artemesia tridentata*), Rabbit brush (*Chrisothamnus spp*), Mt. Joint Fir (*Ephedra viridis*) and Bitterbrush (*Purshia glandulosa*). The Pinyon communities extend down the slope, especially on north exposures, and are replaced at lower elevations by Joshua trees (*Yucca brevifolia*). South exposures tend to have lower density plant growth and at lower elevations are shrub dominated. Some of the canyon bottoms contain running streams and an associated riparian community. These riparian communities may include willow (*Salix spp.*), Fremont cottonwood (*Populus fremonhi*), Big Sage and Rabbitbrush. Perennial grasses are important components of this polygon, but annual grasses general are not.

Fire is a natural part of this ecosystem. The natural fire return interval in the Pinyon pine areas is thought to be 130-150 years. The vegetation in this mountainous portion of this polygon is naturally mosaiced and includes steep rocky terrain which historically has aided in keeping fires small. This polygon is nearly all designated wilderness (Piper Mountain and Sylvania Mountains Wilderness Areas). A number of roads exist in this polygon which could provide access for firefighting.

There are six grazing allotments in this polygon (Deep Springs, Last Chance, South Oasis, Oasis Ranch, White wolf and Fish Lake Valley). There are wild horses and burros in this polygon with a Herd Management area around Piper Mountain. There is a private college (Deep Springs College) and residences located in Deep Springs Valley and a number of scattered alfalfa ranches in Fish Lake Valley. The south boundary of this polygon is Death Valley National Park, the eastern boundary is

the Nevada state line and the western boundary is the Inyo National Forest.

2. Inyo Mountains Polygon

Elevations in this polygon range from 1,100 feet to 11,000 feet. Most of the terrain is extremely steep and dissected with east/west running canyons and parallel ridges. Many of the ridges have extensive rocky outcroppings. Average Precipitation in this polygon is estimated to ranges from 1 inch at the lowest elevations to near 20 inches along the crest with a considerable year to year variation. Portions of the precipitation may come from summer thunderstorms. Snow is not uncommon at higher elevations in the winter. There are approximately 89,000 acres of public land in this polygon

There are a number of different plant communities represented in this polygon. The lowest elevation (1,100 ft.) is dominated by a sparse Creosote bush scrub communities. The vegetation at the highest elevations along the crest is dominated by Conifer forest which may include Pinyon pine, Limber pine (*Pinus flxilis*), Bristlecone pine (*Pinus longaeva*) and Western juniper (*Juniperus occidentalis*) and low growing shrub/grass flats. The conifer communities extend down the slope to approximately the 5,000 foot level especially on north slopes. South exposures tend to have lower density plant growth and at lower elevations many are shrub dominated. Shrub communities also occur along the crest and may contain Big Sage, Mountain Joint Fir, Mountain mahogany (*Cercocarpus ledifolius*), California buckwheat (*Eriogonum ficulatum*), Bitterbrush and perennial grasses. Some of the canyon bottoms contain running streams and an associated riparian communities. These riparian communities may include willow and Rabbitbrush. There are several special status plant species in this polygon. These special status plant species are at low risk from wildfire due to their position on rocky areas and talus slopes. Perennial grasses are important components of this polygon, especially at higher elevations, but annual grasses general are not.

Fire is a natural part of this ecosystem. The natural return interval in the timbered areas is thought to be 130-150 years. The vegetation in this polygon is naturally mosaiced by very steep rocky terrain which historically has aided in keeping fires small. This polygon is nearly all designated wilderness (Inyo Mountains Wilderness Area) roads exist along the eastern boundary in Saline Valley, along the Cerro Gordo road at the south boundary and along the ridge top on the western boundary. Terrain is extremely steep and rugged. These factors combine to limit access for both firefighting and recreation use. Resources at risk include the historic Saline Salt Tram and a number of scattered historic cabins (especially at the old town site of Beverage). The east boundary of this polygon is Death Valley National Park, the northern boundary is Inyo National Forest and the western boundary is the Bishop Resource Area of the Bakersfield District.

3. Owens Lake - Panamint Valley Polygon

This area includes the area north of Little Lake to Olancha, the southern Inyo Mountains, the Darwin Mesa, the Argus Range and the Panamint Valley. Four designated wilderness areas are located within this polygon they are; Argus Range, Darwin Falls, Malpais Mesa and Sacatar Trail Wilderness Areas.

Elevations range from near 1,000 feet in Panamint valley to 8,839 feet on Maturango Peak to 9,184 feet on Cerro Gordo Peak. Most precipitation falls in the winter months and averages from 1 inch or less in the Panamint Valley to 7 inches along the base of the Sierra Nevadas and over 15 inches along the Crest of the Inyo Mountains with a large year to year variation. Portions of the precipitation may come from summer thunderstorms. Snow is not uncommon at higher elevations in the winter. There are approximately 440,000 acres of public land in this polygon.

This area is dominated by desert scrub communities. Creosote Bush scrub is the dominant plant community in this polygon. Other communities include, playas, salt bush scrub, Joshua tree woodlands, and Pinion/Juniper woodlands in the mountains. Varying amounts of perennial grasses are scattered out throughout this polygon. Plant densities in the western portion of this polygon are much higher than in the eastern portion of the polygon. The growth of annual plant species varies tremendously year to year. These annuals include a mixture of grasses and forbes. The density and mixtures of the annuals will depend on the amount and time of year precipitation is received, as well as temperatures. There are several special status plant species in this polygon. These special status plant species are at an unknown risk from wildfire.

Desert Tortoise (a federally listed endangered species) and Mojave ground squirrel (state listed species) may occur over portions of this polygon. Their presence would not only affect fire suppression but the tactics used. Off road travel of fire engines and equipment is restricted in this area. Roads and natural barriers need to be used for fire suppression actions. For these reason dozer use is prohibited in this polygon except to protect human life and property. The use of air tankers is discouraged due to sensitive species. Historically air tanker use is these areas has been minimal. However their use could be allowed if risk to humans life, personal property or unusual conditions warrant.

There are four livestock grazing allotments within this polygon and several wild horse and burro herd management areas. Businesses and/or private residences occur in a number of places in this polygon. These areas include Little Lake, Coso Junction, Dunmovin, Sage Flat, Olancha and Darwin. The historic ghost town of Cerro Gordo also occurs in this polygon. There are communications sites at Sage Flat and on Cerro Gordo Peak. Wild fires could place many of the residences and other private property at risk, especially along the Highway 395 corridor. The polygon borders the Death Valley National Park along its north east side and the western boundary is the Inyo National Forest. The polygon also borders the Navy's China Lake Range (NAWS).

4. Coso Range Polygon

This is primarily the Coso Range Wilderness areas and is located north of the Naval Air Weapons Station. Most precipitation falls in the winter months and averages less than 7 inches with a large year to year variation. Portions of the precipitation may come from summer thunderstorms. Snow is not uncommon at higher elevations in the winter. There are approximately 54,000 acres of public land in this polygon.

This area is dominated by desert scrub communities. Creosote Bush scrub is the dominant plant community in this polygon. Other communities include salt bush scrub, Joshua tree woodlands, and Pinion/Juniper woodlands. Varying amounts of perennial grasses are scattered out throughout this polygon. The growth of annual plant species varies tremendously year to year. These annuals include a mixture of grasses and forbes. The density and mixtures of the annuals will depend on the amount and time of year precipitation is received, as well as temperatures.

This polygon is within this one livestock grazing allotment and one wild horse and burro herd management area. Businesses and/or private residences do not occur in this polygon. The southern boundary of this polygon is the Navy's China Lake Ranges.

5. Panamint Mountains Polygon

Elevations in this polygon range from 1,100 feet to 7,000 feet. Most of the terrain is extremely steep and dissected with east/west running canyons and parallel ridges. Many of the ridges have extensive rocky outcroppings. Average Precipitation in this polygon is estimated to ranges from 1 inch at the lowest elevations to near 20 inches along the crest with a considerable year to year variation. Portions of the precipitation may come from summer thunderstorms. Snow is not uncommon at higher elevations in the winter. There are ap-proximately 72,000 acres of public land in this polygon

There are a number of different plant communities represented in this polygon. The lowest elevation (1,100) is dominated by a sparse Creosote bush scrub communities. The vegetation at the highest elevations along the crest consist of Conifer forest which may include Pinyon pine, Limber pine (*Pinus flexilis*), Bristlecone pine (*Pinus longaeva*) and Western juniper (*Juniperus occidentalis*). The conifer communities extend down the slope to approx. the 5,000 foot level especially on north slopes. South exposures tend to have lower density plant growth and at lower elevations many are shrub dominated. Shrub communities may contain Big Sage, Mt. Joint Fir, Mountain mahogany (*Cercocarpus ledifolius*) and Bitterbrush. Some of the canyon bottoms contain running streams and an associated riparian communities. These riparian communities may include willow and Rabbitbrush. There are several special status plant species in this polygon. These special status plant species are at low risk wildfire due to their position on rocky areas and talus slopes. Perennial grasses are important components of this polygon, especially at higher elevations, but annual grasses general are not.

Fire is a natural part of this ecosystem. The natural return interval in the timbered areas is thought to be 130-150 years. The vegetation in this polygon is naturally mosaiced by very steep rocky terrain which historically has aided in keeping fires small. This polygon includes the Manley Peak and the Surprise Canyon wilderness areas.roads exist along the western boundary and in several of the canyons. Terrain is extremely steep and rugged these factors combine to limit access for both firefighting and mining use. There are scattered mining cabins in the polygon and an active large gold mine (Briggs) located at the mouth of Redlands Canyon. The eastern boundary of the unit is Death Valley National Park.

6. Sierra Canyons Polygon

The elevations range from 3,500 foot to 8,400 foot in this southern Sierra polygon. Most of the terrain is steep and dissected with east/west running canyons and parallel ridges. Many of the ridges have extensive rocky outcroppings. Precipitation in this polygon ranges from 3 inches at the lowest elevations to near 20 inches along the crest. Snow is not uncommon at higher elevations. There are approximately 80,000 acres in this polygon.

There are several different plant communities represented in this polygon. The lowest elevations (3,000 f~in Creosote bush scrub communities. The highest elevations along the crest consist of Conifer forest which may include Gray pine (*Pinus sabiniana*), Pinyon pine, White fir, Sugar Pine and Interior live oak. The Pinion pine communities extend down the slope to approx. the 5,000 foot level especially on north slopes. South exposures tend to have lower density plant growth and many are shrub dominated. Many of the canyon bottoms contain running streams and an associated riparian communities. These riparian communities may include Fremont cottonwood (*Populus fremonni*), willow (*Salix spp.*) and Rabbitbrush. There are at least six special status plant species in this polygon. Most of these plant species are at low risk from wildfire. This is due to their position on rocky outcrops and talus slopes. Annual production in these canyon's lower elevations are a combination of annual forbes and grasses. The area is noted for spectacular wild flower displays.

Fire is a natural part of this ecosystem. The natural return interval for the Pinion forested areas is 130-150 years. The vegetation in this polygon is naturally dissected which historically has aided in keeping many fires small in size, however in portions of this polygon under certain conditions fires have become large (1,000+ acres). This polygon is nearly all designated wilderness (Owens Peak, and Secetar Canyon Wilderness Areas) roads only exist in canyon bottoms south of Little Lake Canyon. Terrain is extremely steep and rugged these factors combine to limit access for both firefighting and recreation use The lower sections of these canyons have moderate recreational use. The western boundary of this polygon is the Caliente Resource Area of the Bakersfield District.

7. Grapevine Canyon Polygon

This polygon consists of the Grapevine Canyon drainage and is entirely within the South Sierra polygon. The vegetation and terrain are very similar to the South Sierra polygon. It differs in that there are private in holdings and residences which would be at risk from wildland fire. There are approximately 370 acres of public land in this Polygon.

Fire is a natural part of this canyon's ecosystem. The natural return interval in the pinyon pine community is thought to be 130-150 years. This polygon is bordered by the Owens Peak wilderness. The lower sections of this canyon has some recreational use and a cattle grazing allotment.

8. Freeman Canyon Polygon

This polygon consists of the Freeman Canyon drainage. The vegetation and terrain are very similar

to the South Sierra polygon. It differs in that there are private in holdings and residences which would be at risk from wildland fire. There are approximately 15,000 acres in this polygon.

Fire is a natural part of this canyon's ecosystem. The natural return interval in the pinyon pine community is thought to be 130-150 years. This polygon is nearly all wilderness area (Owens Peak and Kiavah Wilderness) except for the private lands. The canyon has some recreational use and a cattle grazing allotment.

9. Scodi Mountain Polygon

The elevations in this southern Sierra polygon range from 3,500 foot to 6,700 foot. Most of the terrain is steep and directed with deep canyons and parallel ridges radiating out to the east and south from the Scodi Mountains. Many of the ridges have extensive rocky outcroppings. Precipitation in this polygon ranges from 3 inches at the lowest altitudes to near 20 inches along the crest. Snow is not uncommon at higher elevations. There are approximately 19,000 acres of public land in this polygon.

There are several different plant communities represented in this polygon. The lowest elevations (3,000 foot) contain Creosote bush scrub communities. The highest elevations consist of pine forest which may include Gray pine and Pinyon pine. The Pinion pine communities extend down the slope to approx. the 5,000 foot level especially on north slopes. South exposures tend to have lower density plant growth and many are shrub dominated. A few of the canyon bottoms contain running streams and an associated riparian communities. These riparian communities may include Fremont cottonwood (*Populus fremontii*), willow (*Salix spp.*). Annual grasses are general an important component in this area especially in the Kelso Creek drainage.

Fire is a natural part of this ecosystem. The natural return interval in timbered areas is 130-150 years. The vegetation in this polygon is naturally dissected which historically has aided in keeping many fires small in size. This polygon is nearly all designated wilderness (Kiavah Wildemess Area). Access roads exist in most of the canyon bottoms outside wildemess in the area. Terrain is steep and rugged which combine to limit access. The lower sections of these canyons have moderate recreational use by off road vehicles. There are no residences in this polygon, but it is bordered on the north by the Freeman Canyon polygon which contains residences. The Polygon borders the Sequoia National Forest.

10. Bright Star Polygon

This is basically the Bright Star Wildemess Area. This elevations in this polygon range from 3,100 foot to 6,100 foot. Most of the terrain is steep and dissected with deep canyons and parallel ridges radiating out to the east from the Piute Mountains. Many of the ridges have extensive rocky outcroppings. Precipitation in this polygon ranges from 6 inches at the lowest altitudes to near 20 inches along the crest. Snow is not uncommon at higher elevations.

There are several different plant communities represented in this polygon. The lowest elevations (3,000 foot) contain Joshua tree woodlands communities. The highest elevations consist of pine forest which may include Gray pine and Pinyon pine. The Pinion pine communities extend down the slope to approx. the 5,000 foot level especially on north slopes. South exposures tend to have lower density plant growth and many are shrub dominated. A few of the canyon bottoms contain running streams and an associated riparian communities. These riparian communities may include Fremont cottonwood (*Populus fremontii*), willow (*Salix spp.*). Annual grasses are general an important component in this area.

Fire is a natural part of this ecosystem. The natural return interval in Pinyon pine areas is 130-150 years. This polygon is naturally dissected which historically has aided in keeping many fires small in size. This polygon is nearly all designated wildemess (Kiavah Wildemess Area). Access roads exist along the east, south and north boundaries of the area. Terrain is steep and rugged which combine to limit access. There are no residences in this polygon, but it is bordered on the north and east by residential areas along Kelso Creek. The Polygon borders the Sequoia National Forest. There is commercial timber on the adjacent National Forest.

11. Piute Mountains Polygon

This is located just south of the Bright Star Wildemess Area. This elevations in this polygon range from 3,900 foot to 7,700 foot. Most of the terrain is steep and dissected with canyons and parallel ridges radiating out to the east from the Piute Mountains. Many of the ridges have extensive rocky outcroppings. Precipitation in this polygon ranges from 7 inches at the lowest altitudes to near 20 inches along the crest. Snow is not uncommon at higher elevations.

There are several different plant communities represented in this polygon. The lowest elevations contain oak woodlands and annual grassland communities. The highest elevations consist of pine forest which may include Ponderosa pine (*Pinus ponderosa*), Gray pine and Pinyon pine. The Pinion pine communities extend down the slope to approx. the 5,000 foot level especially on north slopes. South exposures tend to have lower density plant growth and many are shrub dominated. A few of the canyon bottoms contain riparian communities. These riparian communities may include Fremont cottonwood (*Populus fremontii*) and willow (*Salix spp.*).

Fire is a natural part of this ecosystem. The natural return interval in conifer areas is 130-150 years. This polygon is naturally dissected which historically has aided in keeping many fires small in size. Access roads exist along the east, south and north boundaries of the area. Terrain is steep and rugged which combine to limit access. There are no residences in this polygon, but it is bordered on the east by residential areas in Kelso Valley. The Polygon borders the Sequoia National Forest. There is commercial timber on the adjacent National Forest.

12. Middle Knob Polygon

This polygon consists of a high elevation plateau surrounded by steep walled canyons and

escarpments. The plateau is long and narrow as it runs nearly nine miles along ridge tops that are about one mile wide. Elevations range from 3,500 feet to 6,600 feet. Most of the polygon is around 6,000 feet elevation. The elevation drops rapidly around the east and south sides of the plateau. Many of the sides have extensive rocky outcroppings. Precipitation in this polygon ranges from 4 inches at the lowest altitudes to near 20 inches along the crest. Snow is common at higher elevations. There are approximately 18,000 acres in this polygon.

The plateau area supports a mixed stand of scrub oak chaparral and conifer forest. Plant densities are high in this area and there is nearly continuous plant cover. The chaparral area consists of continuous stands of Scrub oak (*Quercus dumosa* and *Quercus turbinella Ssp californica*), Manzanita (*Arctostaphylos spp*) and Ceanothus (*Ceanothus greggii*). The conifer forest consists primarily of Pinyon pine with some Gray pine, Jeffery pine and Canyon oak (*Quercus chrysolepis*). The Pinion pine communities extend down the slope to approx. the 5,000 foot level especially on north slopes. South exposures tend to have lower density plant growth and many are shrub dominated. Pine Tree Canyon is the primary drainage for the area and it contain riparian communities. These riparian communities may include Fremont cottonwood (*Populus fremonhi*), willow (*Salix spp.*). Nearly the entire range for one special status plant, Kern buckwheat (*Eriogonum kennedyi var pinicola*), is found within this polygon. It is unknown how this plant responds to fire.

Fire is a natural part of this ecosystem. The natural return interval in conifer areas is 130-150 years. A single public access road exist into the plateau. The road is steep and narrow which limits access to 4X4 vehicles. The dense vegetation and terrain limit vehicle access to the one main road along the plateau. There are numerous cultural resources sites in this polygon. A portion of the road is also the route for the Pacific Crest Trail. There are no residences in this polygon, but it is bordered on the west by residential areas in Sand Canyon (Tehachapi area). The north-west portion of this polygon has a wind energy development.

13. East Kern - San Bernardino Polygon

This Mojave Desert area includes Searles Valley and the area south of Little Lake (Inyo County). Annual rainfall in this polygon varies considerably year to year. Most precipitation falls in the winter months and ranges from 2.5 inches in the valley bottoms to 6 inches at the 4,000 foot level.

This area is dominated by desert scrub communities. Creosote Bush scrub is primary component of this community. Other components include, Playas, Salt bush scrub, and small amounts of Joshua Tree woodlands, and Pinion Juniper woodlands along Sierra front. Varying amounts of perennial grasses are scattered out throughout this polygon. Annual plant production varies tremendously with varying rainfalls year to year. Annual production of these annuals can vary from zero to over 3,000 pounds per acre. These annuals include a mixture of grasses such as Cheat grass, Red Brome, and Schismus, and forbs. The density and mixtures of the annuals will depend on the amount and time of year precipitation is received, as well as temperatures. These plant communities of the Mojave Desert did not evolve with fire carriers such as Cheat grass and Red Brome. Therefore our goal in this polygon is to reasonably minimize acreage burned. We also are not advocating prescribed fire

use.

Desert Tortoise (a federally listed endangered species) and Mojave ground squirrel (state listed species) occur over much of this polygon. Their presence not only affect fire suppression but the tactics used. Off road travel of fire engines and equipment is restricted in this area. Roads and natural barriers need to be used for fire suppression actions. For these reason Dozer use is prohibited in this polygon except to protect human life and property. The use of air tankers is discouraged due to these sensitive species. Historically air tanker use is these areas has been minimal. However their use is allowed if unusual conditions warrant.

14. Antelope Valley Polygon

This polygon covers the lands south of Mojave and is mostly private with widely scattered public lands. Precipitation falls primarily in the winter months and ranges from 6 inches in the valley bottoms to 15 inches at the 4,000 foot level.

This area is dominated by desert scrub communities at its lower elevations. Among the mountain fringes in the southern and western portions of the polygon, vegetation changes to Joshua Tree woodlands, Oak woodlands/Chaparral woodlands. On the western portion of this polygon we enter California Annual Grasslands community. These areas have substantially higher grass production than lower elevation desert areas. Annual plant production varies tremendously with varying rainfalls year to year. Production. The density and mixtures of the annuals will depend on the amount and time of year precipitation is received, as well as temperatures. Bureau of Land Management lands in this polygon are highly interspersed and listed in the RMP as part of a proposed disposal areas. This polygon has urban interface areas scattered nearly throughout the polygon and a high potential for large hazardous fires.

Desert Tortoise habitat and Mojave ground squirrel occur over much of this polygon. Roads and natural barriers can be used for fire suppression actions. Due to high urban interface occurrence in this polygon dozer and air tankers may be used. Historically air tanker use is these areas has been high.

15. Kelso Valley Polygon

This polygon is located at the south end of Kelso Valley. This elevations in this polygon range from 3,800 foot to 5,500 foot. Most of the terrain is rolling with moderate slopes up to the Sierra crest along the western edge of the unit. Precipitation in this polygon ranges from 7 inches at the lowest altitudes to near 15 inches along the crest. Snow is not uncommon at higher elevations. There are approximately 4,000 acres of public land in this polygon. Over 80% of the polygon is private land.

There plant communities represented in this polygon are similar to those along the west side of the southern Sierra Nevada Mountains. The lowest elevations contain oak woodlands and annual grassland communities. Dominant trees in this area include Valley oak (*Quercus lobata*), Blue oak

(*Quercus douglasii*) and Gray pine. The higher elevations and north exposures may additionally include Interior live oak (*Quercus wislizeni*), Canyon Oak (*Quercus chrysolepis*), Pinyon pine and chaparral.

Fire is a natural part of this ecosystem. The natural return interval is 130-150 years. Several access roads exist through the area. Terrain gentle which allows cross country access. The Pacific Crest Trail runs along the western edge of this polygon. There are residences in this polygon.

B. Current Wildland Fire Situation

1. Fish Lake Valley Polygon

Significant fires in this desert area are rare. The fire history shows there were two fires between 1980 and 1993. Fuels in this polygon are low brush with little annual grass in most years. This polygon is subject to windy conditions which could contribute to rapid spread through light fuels. Fuel loading in the annual grass component can very from zero to 0.5 tons per acre (typically .25-.75 tons per acre). The perennial component can vary, typical areas will be around 20 tons per acre. When the high annual fuel conditions exist, fire could carry well with a high rate of spread through the scrub component. Fires in these high fuel loading years could produce fires of 6-10 foot flame lengths and are moderately resistant to suppression. Historically fires have occurred around the ranches and highway corridors. A significant consideration in this polygon is its distance from CDD fires suppression resources. Typical response times for engines would be three hours. For this reason cooperators will play an important role in initial attack. Interim wilderness guidelines will apply to fire suppression in the designated wilderness areas. Managed wildfires are not practical in this polygon due to its remote location. Prescribed fire is the best means to achieve decadal acreage ends of 1,000 acres.

Urban interface in polygon occurs at Deep Springs College and several scattered ranches in Fish Lake. There will be no restrictions on equipment and tactics in these interface areas.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good. Light flashy fuels will produce smoke for a short period of time. Prescribed fires will not be a factor in this polygon.

2. Inyo Mountains Polygon

This polygon has a few urban interface considerations within it consisting of miners cabins in Saline valley. It also have historic structures within it. These include the Salt Tram and historic cabins scattered through the area including those in the Beverage Canyon area. Any suppression actions must consider the need to preserve these historic structures. Fire occurrence in the Inyo mountains is low. There were two fires in the historic data between 1980-1993 both these fires were lightning caused. The mountain range has heavy fuels (Pinyon, Bristlecone, and Limber pine woodlands with up to 189 tons per acre) with extremely steep and inaccessible terrain. The fire return interval is

approximately 130+ years. Light flashy fuels are patchy and not a factor in fire spread. The steep canyons and rocky outcroppings provide excellent natural barriers to fire spread. This polygon has a small potential for large fires.

Fire needs to take a natural role in this ecosystem and a mosaic pattern needs to be maintained. Due to the 130 year return interval in this 89,000 acre polygon, fire can be allowed to burn 7,000 acres every ten years and maintain a healthy ecosystem. Management ignitions for hazard reduction to fuels surrounding historic structures needs to considered. Reducing the risk to these historic structures can be accomplish by prescribed fire as well as mechanical means. These treatments will be small in acreage.

Smoke management concerns in this polygon are minimal. This area has good smoke dispersal and the nature of the polygon will keep fires small.

3. Owens Lake - Panamint Valley Polygon

Significant fires in this desert area occur mainly in the western portion of the polygon, especially along the Highway 395 corridor. This area is subject to windy conditions which contribute to rapid spread through medium fuels. Fuel loading in the annual grass component can vary from zero to 1 ton per acre (typically .25-.75 tons per acre), the perennial component can vary from 1-30 tons per acre. Typical areas will range from around 30 tons per acre on the western boundary of the polygon to 1 ton in the Panamint Valley. The annual fuel component in this polygon is not necessary to spread fires in its western portions. Fire carries well with a high rate of spread through the scrub component which are moderately resistant to suppression. Historically fires have occurred primarily from the Olancha area south along the Highway 395 corridor and in the southern potion of the Inyo Mountain range. The sparse vegetation in the bottom of Panamint Valley area does not support fire spread. Between 1980-1993 there were approximately 41 fires in this polygon, 36 of those were in the Olancha/southern Inyo Mountain area. Most of these fires remained small in size where initial attacks or natural barriers contained/controlled them quickly. Ignitions in the western area have grown large. Approximately 90% of fires are man caused as this highway corridor is heavily used. This polygon has moderate lightning activity which has ignited fires especially in the southern Inyo Mountains. Although fire is undesired in this polygon and full suppression will be employed to achieve management goals, a customary decadal acreage of 1,000 acres has been set to reflect a maximum target.

Inholding of Pinion along the southern Inyo Mountains is the exception in this polygon. These areas are easily defined in the field and generally occur above 5,000 feet elevation in this polygon. Fires in these areas have small spread potential and these units are small in area. Fires occurring in these areas generally will stay self contained.

Urban interface in polygon occurs at Olancha and along the Highway 395 corridor, Sage Flat, Darwin, the historic Cerro Gordo mining town and various scattered mining sites in the Panamint Valley. There will be no restrictions on equipment and tactics in these interface areas.

Smoke management concerns in this polygon are minimal. The western portions of the polygon are within one of two federal PM_{10} non-attainment areas. Both the non-attainment classifications are due to fugitive dust. The Owens Valley non-attainment is due almost exclusively to fugitive dust emissions from Owens Lake during high wind events. A reclassification to attainment has been filed for the Searles Valley area, Inversions are rare in the summer months, mixing and dispersion are very good. Medium fuels will produce smoke for a short period of time. Prescribed fires will not be a factor in this polygon.

4. Coso Range Polygon

This polygon has no urban interface considerations within it. Fire occurrence in the Coso Range is low. There were no reported fires in the historic data between 1980-1993. This arid mountain range has a scattered heavy fuels (Pinyon woodlands up to 189 tons per acre, Joshua Tree woodlands 39-65 tons per acre, brush type 10-21 tons per acre). Fires return interval in the Pinyon woodlands is approximately 130. Fuels in this polygon are not continuous and do not carry fire well. The remoteness of the polygon and its inability to sustain large fires may account for its having no fire history. There may have been ignitions in the polygon that went out unnoticed.

Fire needs to have a role in this ecosystem to encourage a mosaic system. It is acceptable to burn as much as 4,000 acres every ten years. Smoke management concerns in this polygon are minimal. The Owens Valley non-attainment is due almost exclusively to fugitive dust emissions from Owens Lake during high wind events. Inversions are rare in the summer months, mixing and dispersion are very good. Medium fuels will produce smoke for a short period of time. Prescribed fires could be utilized within decadal acreage.

5. Panamint Mountains Polygon

This polygon has cabins that are inhabited and historic uninhabited cabins within it and a large operating gold mine. Any suppression action would have to consider the need to protect these areas from fire. Fire occurrence within this polygon is low, with two reported fires between 1980-1993. These fires were lightning caused. This polygon has numerous canyons with perennial streams and associated riparian areas consisting primarily of Rabbitbrush, cottonwood and willows. This arid, very steep rugged mountain range is dissected by natural barriers to fire. Brush and grass do not grow well on steep canyon sides. Brush and occasional Pinyon pine stands are present in the higher elevations. Fuel loading is: brush, 10-21 tons per acre and Pinyon pine, 150 tons per acre. The return interval for fire in the Pinyon fuel type is approximately 130 years. Discontinuous fuels, steep canyon walls, and rocky ridges prevent this polygon from sustaining large fires. Fires in the riparian areas can sustain themselves and spread easily, however they will not spread from the riparian areas.

Fire needs to have a role in this ecosystem. Allowable burn acreage per ten years is 6,000 acres. This is derived from the return interval in the heavier fuels. Management ignitions are proposed in the riparian areas to create needed mosaic patterns. In this riparian fuel types, 30-40 acres is an allowable burn every ten year period. Extremely steep rocky terrain with small pockets of heavy pinon pin make

prescribed fire impractical.

Smoke management concerns in this polygon are minimal. Management ignitions will need to consider smoke management.

6. Sierra Canyons Polygon

This polygon has no urban interface considerations within it. However fires near the edge of the polygon could affect adjoining polygons that do contain urban interface concerns. The Pacific Crest National Scenic Trail runs though the western potion of this polygon. This could pose a safety issue to hikers along the trail.

This polygon has had approximately 12 fires between 1980-1993. Most of these fires were man caused and two of them burned more than 500 acres one becoming a class II fire. However their is evidence of lightning starts in this scattered through out this area. Fires in this fuel type burn best under windy condition which are common in this area in the afternoon. North facing slopes contain the heaviest fuels, (Pinyon woodlands-189 tons per acre) southern exposures have sparse fuels (Joshua tree woodlands, 30-65 ton per acre; Brush type, 10-20 tons per acre) these flashy fuels carry fire well. The polygons natural breaks, fuel loading and diurnal wind shifts tend to self limit fires. The riparian areas in the bottoms of canyons in this polygon have dense continuous fuels. These fuels consist of dense Rabbit brush, and Willow. There is a large volume of dead material associated with these riparian areas. Fire will burn and spread readily through these areas. There are roads and natural breaks in these riparian areas where suppression actions would be relatively easy.

Allowing natural fire to have a role is important to this polygon's ecosystem. A mosaic is natural in this ecosystem and needs to be maintained. Management ignitions also need to play a role in returning a natural mosaic to the riparian areas that at present are nearly decedent stands of willows and Rabbit brush. Fragmenting these decadent stands would also insure mosaic patterns can be maintained by preventing larger riparian wildfires. Management ignitions of non-riparian areas in this polygon are not anticipated. Based on return interval of fire being approximately 130 years and our estimated acreage (80,000 acres) we can allow 6,100 acres to burn every 10 years. Management ignition of the riparian areas may be undertaken to reduce fuel loading, improve wildlife habitat, and create natural fire breaks. The 10 year target is 30-40 acres in the riparian areas.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good. Proposed riparian area prescribed fire will have to consider smoke management.

7. Grapevine Canyon Polygon

This small (370 acre) polygon is entirely within the Sierra Canyons polygon. The fire potential is the same as is described in the that polygon. There were no fires between 1980-1993 time period. This polygon was created because of the urban interface concerns. Prescribed ignitions for hazard fuel

reduction are appropriate in this polygon for protection of life and property. Prescribe fire to achieve hazard fuels reduction is desireable in this polygon.

Smoke management concerns in this polygon are minimal. I nversions are rare in the summer months, mixing and dispersion are very good. Proposed hazard reduction prescribed fire will have to consider smoke management.

8. Freeman Canyon Polygon

This polygon is the south end of the Sierra Canyons polygon with the same fire potential. Their were 6 fires in this polygon between 1980-1993. This polygon was created due to its urban interface considerations. For that reason hazard reductions burns are appropriate in this polygon for protection of life and property with no limitation on acreage within the polygon.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good. Proposed hazard reduction prescribed fire will have to consider smoke management.

9. Scodi Mountain Polygon

This polygon has no urban interface considerations within it. However fires near the north edge of the polygon could affect adjoining polygons that do contain urban interface concerns. The Pacific Crest National Scenic Trail runs though the western potion of this polygon. This could pose a safety issue to hikers along the trail. A large portion of the western boundary of this polygon is the Sequoia National Forest.

This polygon has had one fire between 1980-1993. A large lightning fire burned down into the area from the National Forest in 1997. Fires in this fuel type burn best under windy condition which are common in this area in the afternoon. North facing slopes contain the heaviest fuels, (Pinyon woodlands, 150 tons per acre) southern exposures have sparse fuels (Joshua tree woodlands 30-65 ton per acre, Brush type 10-20 tons per acre) these flashy fuels carry fire well. The polygon's natural breaks, fuel loading and diurnal wind shifts tend to self limit fires. The riparian areas in the bottoms of some canyons in this polygon have dense continuous fuels. These fuels consist of dense Rabbit brush, and Willow. There is a large volume of dead material associated with these riparian areas. Fire will burn and spread readily through these areas. There are roads and natural breaks in these riparian areas where suppression actions would be relatively easy.

Allowing natural fire to have a role is important to this polygon's ecosystem. A mosaic is natural in this ecosystem and needs to be maintained, however, there is a concern for fires starting in this unit and spreading to the adjacent National forest or extending north into the Freeman Canyon and/or Walker Pass area which contain numerous residences. For these reasons prescribed fire will be used to attain decadal acreage of 1,000 acres.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good. Proposed riparian area prescribed fire will have to consider smoke management.

10. Bright Star Polygon

This polygon is entirely wilderness area and has no urban interface considerations within it. However fires near the edge of the polygon could affect adjoining polygons, specifically Kelso Creek that contain urban interface concerns. The Pacific Crest National Scenic Trail runs south of this polygon. This could pose a safety issue to hikers along the trail.

This polygon has had 3 fires between 1980-1993. Fires in this fuel type burn best under windy condition which are common in this area in the afternoon. North facing slopes contain the heaviest fuels, (Pinyon woodlands, 150 tons per acre) southern exposures have sparse fuels (Joshua tree woodlands, 30-65 ton per acre; brush type, 10-20 tons per acre) these flashy fuels carry fire well. Fuels at the top of this polygon are continuous and can carry fire into the adjoining USFS lands.

This polygon has close proximity to both urban interface and adjoining tracts of marketable timber. Due to these considerations we have placed it in a separate polygon that will allow full suppression actions. Decadal acreage of approximately 1,000 acres can be achieved through prescribed fire.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good.

11. Piute Mountains Polygon

This polygon no urban interface considerations within it. However fires near the edge of the polygon could affect adjoining areas, specifically Sequoia National Forest, that contain marketable timber. P acific Crest National Scenic Trail runs through the north of this polygon. This could pose a safety issue to hikers along the trail.

This polygon has had 9 fires between 1980-1993. Fires in this fuel type bum best under windy condition which are common in this area in the afternoon. North facing slopes contain the heaviest fuels, (Pinyon woodlands, 150 tons per acre) southern exposures have sparse fuels (Joshua tree woodlands, 30-65 ton per acre; brush type, 10-20 tons per acre) these flashy fuels carry fire well. This polygon has steep terrain and fairly continuous fuels that can carry fire to the heavier fuels at its highest elevations and to the USFS.

This polygon has close proximity to both urban interface and adjoining tracts of marketable timber. Due to these considerations we have placed it in a separate polygon that will allow full suppression actions. Therefore, decadal acreage of approximately 1,000 acres can be achieved through prescribed fire.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good.

12. Middle Knob Polygon

This polygon has urban interface considerations beyond its west boundary, and wind energy developments in the north west portion. Fires in this polygon could be a threat to these to these and adjoining vegetation. The Pacific Crest National Scenic Trail runs through this polygon. This could pose a safety issue to hikers along the trail.

This polygon has had 9 fires between 1980-1993. Large fire activity in this polygon have not occurred during this time frame. However the potential for large fires exists in extremely dry windy conditions exists, which are common in this area. Heavy fuels are continuous in this polygon with scattered natural breaks. Road access is extremely limited and may pose a safety threat to Engines in a large fire situation. The plateau contain the heaviest fuels, (Pinyon woodlands, 150 tons per acre; Brush type, 60-80 tons per acre). Slopes that lead up the plateau have lighter desert scrub type fuels (Joshua tree woodlands, 30-65 ton per acre; brush type-10-20 tons per acre) these flashy fuels carry fire well, if continuous. This polygon is primarily a plateau with continuous heavy fuels that can carry fire on the plateau. Escarpments and steep slopes that contain light fuels surround most of the plateau.

Fire needs to have a role in this ecosystem to encourage a mosaic pattern of fuels. It is acceptable to burn as much a 1,300 acres every ten years. Prescribed ignitions in this polygon can assist with attaining these burn totals. Suppression actions need to consider that this polygon has numerous cultural sites and special status plant species. The use of bulldozers in this polygon should only be used to prevent the spread of fire out of this polygon.

Smoke management concerns in this polygon are present because of heavy fuels. Dispersal should be good and inversions rare in the summer months. Prescribed fire planning would have to coordinate closely with other agencies and plan burns only good burn days.

13. East Kern - San Bernardino Polygon

Significant fires in this desert area can occur anywhere in the polygon when there is adequate annual production to carry fires. Primarily high grass production occurs in the mountainous areas and their fringes associated with the mountains. This polygon is subject to windy conditions which contribute to rapid spread through light fuels. Fuel loading in the annual grass component can very from zero to 1 ton per acre (typically .25-.75 tons per acre). The perennial component can vary, but typically will be around 20 tons per acre. When the high annual fuel conditions exist, fire carries well with a high rate of spread through the annual grass component consuming the scrub component. Fires in these high fuel loading years can produce fires of 6-10 foot flame lengths and are moderately resistant to suppression. Historically fires have occurred primarily in the Red Mountain area, El Paso

mountain area and highway corridors. In this polygon between 1980-1993 there were approximately 150 fires, most of these fires remained small in size where initial attacks or natural barriers contained/controlled them quickly. Ignitions in the more mountainous areas of the polygon have spread to over a hundred acres with several over one thousand acres. Approximately 90 percent of fires are man caused as this desert area which has high recreational use and low lightning activity. Although fire is undesired in this polygon and full suppression will be employed to achieve management goals, a customary decadal acreage of 1,000 acres has been set to reflect a maximum target.

Small inholding of Pinion Juniper along the Sierra front are the exception in this polygon. These areas are easily defined in the field and at this polygons highest elevations approx. 5000 feet. Fires in these areas have small spread potential and these units are small in area. Fires occurring in these areas generally will stay self contained unless there is a high production of annual grasses.

Urban interface in this polygon occurs at Ridgecrest, Inyokern, Randsburg, Red Mountain, and California City areas and other scattered sites within the polygon. There will be no restrictions on equipment and tactics in these interface areas.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good. Light flashy fuels will produce smoke for a short period of time. Prescribed fires will not be a factor in this polygon.

14. Antelope Valley Polygon

Significant fires in this polygon occur primarily in the western and southern portions where there is high annual grass production and dense perennial vegetation to carry fires. This polygon is subject to windy conditions which contribute to rapid spread through light fuels. Fuel loading in the annual grass component can very from 0 to 2 ton per acre (typically .25-1 tons per acre), the perennial component can vary, but typically will be around 30 tons per acre. When the high annual fuel conditions exist, fire carries well with a high rate of spread through the annual grass component consuming the scrub component. Fires in these high fuel loading years can produce fires of 6-12 foot flame lengths and are moderately resistant to suppression. Historically fires have occurred primarily west of Highway 12 in the Rosemond area. In this polygon between 1980-1993 there were approximately 42 fires. Los Angeles County has direct protection responsibilities on the southern end of this polygon. This polygon has a high potential for large destructive fires. Kern and Los Angeles Counties, along with the BLM, take aggressive initial attack with common use of air tankers and dozers. Even with heavy initial attack fires often escape and become large. One fire in that area in 1996 was over 7,000 acres. Approximately 90% of fires are man caused due to urban interface and high human activity and low lightning activity. The overall goal in this polygon is to keep burnt acres to a minimum and protect life and property. The management goal is to keep 90% of fires to 100 acres of less. The interspersed ownership of this polygon make prescribed fire impractical except in conjunction with Kern and Los Angeles Counties. Although fire is undesired in this polygon and full suppression will be employed to achieve management goals, a customary decadal acreage of 1,000

acres has been set to reflect a maximum target.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good. Light flashy fuels will produce smoke for a short period of time. Prescribed fires will not be a factor in this polygon.

15. Kelso Valley Polygon

This polygon has urban interface considerations and wind energy developments south of the polygon. Fires in this polygon could be a threat to the residents. Pacific Crest National Scenic Trail along the western edge of this polygon. Fires could pose a safety issue to hikers along the trail. Most of the land in this polygon is private. This is a full suppression area because of the urban interface and the large amount of private land.

This polygon has had 5 fires between 1980-1993. Large fire activity in this polygon have not occurred during this time frame. However the potential for large fires exists in extremely dry windy conditions, which are common in this area. Light flashy fuels are continuous in this polygon with scattered heavy fuels. The higher elevations contain the heaviest fuels, (Pinyon woodlands, 150 tons per acre; brush type, 60-80 tons per acre). The flashy fuels carry fire well if continuous.

Fire needs to have a role in this ecosystem to encourage a mosaic pattern of fuels. Prescribed ignitions in this polygon can assist with attaining vegetation goals. Due to the large amount of private lands and urban interface hazard reduction burns could be undertaken in cooperation with Kern County. A decadal target acreage of 1,000 acreas has been placed on this polygon.

Smoke management concerns in this polygon are present because of heavy fuels. Dispersal should be good and inversions rare in the summer months. Prescribed fire planning would have to coordinate closely with other agencies and plan burns can only occur on good burn days.

C. Preliminary Fire Management Strategies

The categories used in this Phase I document are derived from the four suggested categories listed in Information Bulletin 97-2031 (February 5, 1997) and are further described on pages 2 and 3 of this FMP.

D. Proposed Fire Management by Polygon

1. Fish Lake Valley Polygon

ASR Category A_1.

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90 percent of the time. However, initial attack will normally not

include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

2. Inyo Mountains Polygon

ASR Category C.

Use an appropriate mix of initial attack suppression resources with suitable tactics to meet resource and confinement objectives within established constraints (e.g., decadel allowable acreages, etc.). Line construction and burning out may be done to complete confinement objectives, if natural barriers and fuel conditions do not achieve containment. Fires burning under these conditions will receive appropriate attention by qualified personnel to insure confinement, until the fire is declared out.

3. Owens Lake - Panamint Valley Polygon

ASR Category A_1.

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90 percent of the time. However, initial attack will normally not include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

4. Coso Range Polygon

ASR Category C.

Use an appropriate mix of initial attack suppression resources with suitable tactics to meet resource and confinement objectives within established constraints (e.g., decadel allowable acreages, etc.). Line construction and burning out may be done to complete confinement objectives, if natural barriers and fuel conditions do not achieve containment. Fires burning under these conditions will receive appropriate attention by qualified personnel to insure confinement, until the fire is declared out.

5. Panamint Mountains Polygon

ASR Category C.

Use an appropriate mix of initial attack suppression resources with suitable tactics to meet resource and confinement objectives within established constraints (e.g;, decadel allowable acreages, etc.). Line construction and burning out may be done to complete confinement objectives, if natural barriers and fuel conditions do not achieve containment. Fires burning under these conditions will receive appropriate attention by qualified personnel to insure confinement, until the fire is declared out.

6. Sierra Canyons Polygon

ASR Category C.

Use an appropriate mix of initial attack suppression resources with suitable tactics to meet resource and confinement objectives within established constraints (e.g., decadel allowable acreages, etc.). Line construction and burning out may be done to complete confinement objectives, if natural barriers and fuel conditions do not achieve containment. Fires burning under these conditions will receive appropriate attention by qualified personnel to insure confinement, until the fire is declared out.

7. Grapevine Canyon Polygon

ASR Category A.

Use full, sustained and aggressive suppression actions to contain all fires within the first burning period. For suppression of fires that elude containment objectives an appropriate action plan will be developed based upon a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on protection of life and property, reducing social/economic losses and minimizing suppression costs, rehabilitation costs, and resource/environmental damages (use of dozers and air tankers is approved).

8. Freeman Canyon Polygon

ASR Category A.

Use full, sustained and aggressive suppression actions to contain all fires within the first burning period. For suppression of fires that elude containment objectives an appropriate action plan will be developed based upon a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on protection of life and property, reducing social/economic losses and minimizing suppression costs, rehabilitation costs, and resource/environmental damages (use of dozers and air tankers is approved).

9. Scodi Mountain Polygon

ASR Category A_1.

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90% of the time. However, initial attack will normally not include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

10. Bright Star Polygon

ASR Category A_1.

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90% of the time. However, initial attack will normally not include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

11. Piute Mountains Polygon

ASR Category A_1.

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90% of the time. However, initial attack will normally not include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

12. Middle Knob Polygon

ASR Category C.

Use an appropriate mix of initial attack suppression resources with suitable tactics to meet resource and confinement objectives within established constraints (e.g., decadel allowable acreages, etc.). Line construction and burning out may be done to complete confinement objectives, if natural barriers and fuel conditions do not achieve containment. Fires burning under these conditions will receive appropriate attention by qualified personnel to insure confinement, until the fire is declared out.

13. East Kern - San Bernardino Polygon

This Desert polygon is primarily *ASR Category A_1.*

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90% of the time. However, initial attack will normally not include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

Scattered Pinion in-holdings will be managed as *ASR Category C.*

Use an appropriate mix of initial attack suppression resources with suitable tactics to meet resource and confinement objectives within established constraints (e.g., decadel allowable acreages, etc.). Line construction and burning out may be done to complete confinement objectives, if natural barriers and fuel conditions do not achieve containment. Fires burning under these conditions will receive

appropriate attention by qualified personnel to insure confinement, until the fire is declared out.

14. Antelope Valley Polygon

ASR Category A.

Use full, sustained and aggressive suppression actions to contain all fires within the first burning period. For suppression of fires that elude containment objectives an appropriate action plan will be developed based upon a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on protection of life and property, reducing social/economic losses and minimizing suppression costs, rehabilitation costs, and resource/environmental damages (use of dozers and air tankers is approved).

15. Kelso Valley Polygon

ASR Category A.

Use full, sustained and aggressive suppression actions to contain all fires within the first burning period. For suppression of fires that elude containment objectives an appropriate action plan will be developed based upon a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on protection of life and property, reducing social/economic losses and minimizing suppression costs, rehabilitation costs, and resource/environmental damages (use of dozers and air tankers is approved).

CA-066 **PALM SPRINGS - SOUTH COAST FIELD OFFICE**

A. Desired Resource Management

1. Colorado Desert Polygon

The Colorado Desert is part of the greater Sonoran Desert characterized by a subtropical high pressure belt and "rainshadow" from coastal mountain ranges resulting in three to five inches of rainfall per year. Summertime temperatures are consistently over the 100's. Winters are mild (70's) and rarely fall below freezing. The Colorado Desert is comprised of a variety of landforms including valleys, bajadas, pediments, alluvial fans, rough-hewn mountain ranges, washes sand dunes, and dry lakebeds. Creosote bush scrub is the dominant vegetation type with communities of desert dry-wash woodlands interspersed.

Within this polygon are the Santa Rosa Mountains. The north-south trending Santa Rosa Mountains are part of the peninsular ranges which separates the California desert from the coastal inlands. The desert/east side of the Santa Rosas is highly urbanized. The BLM lands are mostly on the eastern flanks of the Santa Rosas. The heavily forested west side is dotted with mountain communities surrounded by US Forest Service lands.

The Colorado Desert polygon includes the following Areas of Critical Environmental Concern (ACECs): the Coachella Valley Preserve System, Whitewater Canyon, Big Morongo Canyon, Chuckwalla Bench, Palen Dry Lake, Sidewinder Well, Mule Mountains, Chuckwalla Valley Dune Thicket, Corn Springs, and Alligator Rock. The following wilderness areas are included in the Colorado Desert polygon: San Gorgonio, Santa Rosa, Mecca Hills, Orocopia Mountains, Chuckwalla Mountains, Little Chuckwalla Mountains, Palen/McCoy, Big Maria Mountains, Rice Valley and the Riverside Mountains.

Fire suppression on public lands within the Colorado Desert is under jurisdiction of the Bureau of Land Management in conjunction with the National Park Service at Joshua Tree National Park and the Mojave National Preserve.

2. Dos Palmas Polygon

Dos Palmas is unique within the hot and dry desert landscape due to the abundance of water. The numerous artesian springs dotting the landscape support thousands of palms trees and provide riparian habitat for the Federally-listed-as-endangered desert pupfish and the Yuma clapper rail. Dos Palmas serves as a critical freshwater resting stop for migratory birds traveling the Pacific flyway. The abundant water at Dos Palmas also provides water for large mammals, such as desert bighorn sheep, during the summer months.

Dos Palmas only receives three to five inches of rainfall per year. Summer temperatures are generally over 100 degrees. Winters are mild and rarely freeze. The source of the artesian springs is natural

damming along the San Andreas fault and seepage from the Coachella Canal upstream from Dos Palmas. The thick continuous stands of tamarisk dominant the landscape which BLM continues to struggle to remove. Prescribed fires would be useful for controlling tamarisk and the slash generated from mechanical tamarisk removal efforts. The removal of tamarisk would greatly enhance habitat for desert pupfish, Yuma clapper rail and other sensitive species. While fires within the palm oasis are not desired as the skirts provide habitat for numerous species, past fires have demonstrated little long-term adverse fire effects.

Dos Palmas was originally designated in the 1980 California Desert Conservation Area Plan as the Salt Creek ACEC. Since designation, BLM and The Nature Conservancy established a partnership to manage the BLM and TNC holdings jointly. The proposed Dos Palmas ACEC encompasses 14,880 acres.

3. South Coast Planning Area Polygon

All of the South Coast Planning Area is within the California Department of Forestry (CDF) Direct Protection Area. The CDF Direct Protection Area is characterized as chaparral brushlands within the wildland-urban interface and includes those portions of the public lands which lie outside the boundaries of the CDCA. BLM administers approximately 400,000 acres of public land in this area, which includes all of Los Angeles and Orange Counties, as well as the western portions of Riverside, San Bernardino and San Diego Counties.

Public lands occur in a scattered fashion, with over 300 separate tracts ranging from 0.02 acres to 18,000 acres. Few of these tracts are large. The largest blocks, encompassing approximately 110,000 acres, are found either in a belt along the Mexican border between Otay Mountain and the Campo Indian Reservation, the Laguna Mountains in the southeastern quadrant of San Diego County, or the Beauty Mountain area which straddles the boundary between Riverside and San Diego Counties. There are three National Forests within this zone; the Angeles, San Bernardino and Cleveland.

Chaparral vegetation type covers most of the public lands within the zone. However, there are isolated grasslands, woodlands, riparian areas and coniferous forests. Many sensitive plant species occur within the area, where there are over two dozen sensitive species and several Federal/State listed as endangered or threatened species. These include the Least Bell's Vireo, the California Gnatcatcher, and the Stephens' Kangaroo Rat.

Particular attention is needed for the public lands on Otay Mountain and Tecate Peak. These public lands have several special designations including: two Wilderness Study Areas (the Western Otay Mountain and Southern Otay Mountain WSAs), two ACECs (Cedar Canyon and Tecate Peak), the Otay National Land and Wildlife Management Area withdrawal, and these lands are part of the core reserve for San Diego County's Multiple-Species Conservation Plan. Since implementation of Operation Gatekeeper where illegal immigration was pushed eastward from the San Diego metropolitan area onto Otay Mountain and Tecate Peak, there has been a significant increase in the

number of wildfires (due to escaped campfires) and subsequent US Border Patrol and CDF activity.

There are six Wilderness/Wilderness Study Areas located in this zone totaling approximately 30,900 acres. Livestock grazing occurs on two allotments, covering approximately 122,500 acres. Recreation on public lands within this zone is on the rise, with increased visitor-use-days for hiking, hunting, nature study, equestrian and off-road vehicle use.

The control of fire is critical to protect life and property within the highly urbanized South Coast. At the same time, fire is a natural and needed force within chaparral. The fuel build-up in chaparral that has not burned in over 25 years poses an extreme fire hazard. Coupled with Santa Ana wind conditions, these fires are often catastrophic which have resulted in lost lives and destruction of property. Prescribed burning is an effective method to reduce fuel loads in chaparral and to create a mosaic of vegetative age classes to protect life, property and to enhance wildlife habitat.

B. Current Wildland Fire Situation

1. Colorado Desert Polygon

This desert polygon has urban interface considerations in Blythe, Coachella Valley, along the Interstate-10 corridor, and Morongo Valley. A significant number of communications sights are located on major peaks in this polygon.

This polygon is characterized by a history of low fire activity (3-5 fires per year). This is due to lack of continuous fine fuels. This low fuel condition exists due to low annual rainfall and very high average temperatures. Historically significant fires have occurred in this polygon when very high pre-season precipitation conditions exist. Large fires of over 5,000 acres have occurred when these conditions exist. When the high fuel conditions exist, fires carry well with a high rate of spread through the annual grass component consuming the scrub component. Fires in these high fuel loading years can produce fires 2-6 foot flame length and are moderately resistant to suppression. Approximately 95% of fires are man caused as this desert area has moderate recreational and agricultural use and low lightning occurrence.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months. Mixing and dispersal are very good. Light flashy fuels will produce smoke for a short period of time. Prescribed fires in this polygon will not be a factor and therefore is the best means to achieve decadal acreage ends of 1,000 acres.

2. Dos Palmas Polygon

The Dos Palmas Preserve is composed of heavy continuous brush fuel types. The area is 1,500 acres and fires there are characteristically intense. Special fire management concerns are necessary due to historical developments, the oases and the T&E species habitat (desert pupfish). High resistance to control is prevalent and fires can be several hundred acres in size by the time first responding units

number of wildfires (due to escaped campfires) and subsequent US Border Patrol and CDF activity.

There are six Wilderness/Wilderness Study Areas located in this zone totaling approximately 30,900 acres. Livestock grazing occurs on two allotments, covering approximately 122,500 acres. Recreation on public lands within this zone is on the rise, with increased visitor-use-days for hiking, hunting, nature study, equestrian and off-road vehicle use.

The control of fire is critical to protect life and property within the highly urbanized South Coast. At the same time, fire is a natural and needed force within chaparral. The fuel build-up in chaparral that has not burned in over 25 years poses an extreme fire hazard. Coupled with Santa Ana wind conditions, these fires are often catastrophic which have resulted in lost lives and destruction of property. Prescribed burning is an effective method to reduce fuel loads in chaparral and to create a mosaic of vegetative age classes to protect life, property and to enhance wildlife habitat.

B. Current Wildland Fire Situation

1. Colorado Desert Polygon

This desert polygon has urban interface considerations in Blythe, Coachella Valley, along the Interstate-10 corridor, and Morongo Valley. A significant number of communications sights are located on major peaks in this polygon.

This polygon is characterized by a history of low fire activity (3-5 fires per year). This is due to lack of continuous fine fuels. This low fuel condition exists due to low annual rainfall and very high average temperatures. Historically significant fires have occurred in this polygon when very high pre-season precipitation conditions exist. Large fires of over 5,000 acres have occurred when these conditions exist. When the high fuel conditions exist, fires carry well with a high rate of spread through the annual grass component consuming the scrub component. Fires in these high fuel loading years can produce fires 2-6 foot flame length and are moderately resistant to suppression. Approximately 95% of fires are man caused as this desert area has moderate recreational and agricultural use and low lightning occurrence.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months. Mixing and dispersal are very good. Light flashy fuels will produce smoke for a short period of time. Prescribed fires in this polygon will not be a factor and therefore is the best means to achieve decadal acreage ends of 1,000 acres.

2. Dos Palmas Polygon

The Dos Palmas Preserve is composed of heavy continuous brush fuel types. The area is 1,500 acres and fires there are characteristically intense. Special fire management concerns are necessary due to historical developments, the oases and the T&E species habitat (desert pupfish). High resistance to control is prevalent and fires can be several hundred acres in size by the time first responding units

arrive to this remote location. There are several buildings within the preserve which need to be protected, including the Dos Palmas ranch house and large equipment warehouse.

Fire danger can be very high to extreme in the immediate vicinity of the oases with the ladder fuels providing a volatile path direct to the crowns of tightly spaced palm trees. Spotting into adjacent fuel beds readily occurs. Fires often require indirect attack with mechanized equipment and aircraft.

There are smoke management concerns in this polygon due to heavy fuels and its location in an agricultural area where crop burns are common. The US Fish and Wildlife Service also puts restrictions on prescribed fires; not allowing them during migration months for waterfowl.

3. South Coast Planning Area Polygon

Southern California Chaparral brushlands dominate this polygon. Urban interface concerns are high as many communities within this polygon. Fires in this polygon are numerous; often very resistant to control, with many escaped fires. These chaparral brushlands are known as one of the most fire prone vegetative types and among the most challenging for wildland fire suppression. Rates of spread, burning indexes and fire intensity can be extremely high in this zone. Fire starts during critical fire conditions can result in large project fires. Fire starts during critical fire conditions can result in large project fires. For these reasons the annual average acres burned are over 20,000 acres. California Department of Forestry protects this area as their direct protection area. The primary cause of fire in this area is human related. The most common causes are abandoned campfires, shooting, fireworks and vehicles. Lightning caused fire occurrence in this zone is low and prescribed fire is the best means to achieve decadal acreage ends of 1,000 acres.

The normal seasonal trend is for most of the fires to occur between May and November, with the more intense fires occurring later in the season. The fire weather throughout this fire management zone is typical Mediterranean, with high summer temperatures and low relative humidities. Winds are primarily southwest to westerly during the spring and summer. The infamous Santa Ana winds are common during the fall and drastically influence fire behavior.

Smoke management is a sensitive issue due to large population blocks in and near this polygon.

C. Preliminary Fire Management Strategies

The categories used in this Phase I document are derived from the four suggested categories listed in Information Bulletin 97-2031 (February 5, 1997) and are further described on pages 2 and 3 of this FMP:

D. Proposed Fire Management by Polygon

1. Colorado Desert Polygon

ASR Category A_1.

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90% of the time. However, initial attack will normally not include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

2. Dos Palmas Polygon

ASR Category B_1.

Use full, sustained and appropriate suppression actions to contain all fires during the first burning period. Initial attack may include air tankers and/or bulldozers to protect life and private property. Strategy for suppressing fires that escape containment during the first burning period will be based upon reducing economic losses, private property damages, resource losses, suppression costs, rehabilitation costs, and environmental damages (Wildland Fire Situation Analysis). Suppression costs, rehabilitation costs and resource/environmental damages will be minimized, commensurate with property values. The future need for aggressive full suppression efforts may be avoided through fuels management, prescribed fire or other strategies which reduce or eliminate the risk to life and property.

3. South Coast Planning Area Polygon

ASR Category B_1.

Use full, sustained and appropriate suppression actions to contain all fires during the first burning period. Initial attack may include air tankers and/or bulldozers to protect life and private property. Strategy for suppressing fires that escape containment during the first burning period will be based upon reducing economic losses, private property damages, resource losses, suppression costs, rehabilitation costs, and environmental damages (Wildland Fire Situation Analysis). Suppression costs, rehabilitation costs and resource/environmental damages will be minimized, commensurate with property values. The future need for aggressive full suppression efforts may be avoided through fuels management, prescribed fire or other strategies which reduce or eliminate the risk to life and property.

Beauty Mountain. Burning is proposed for hazard reduction and wildlife habitat enhancement. It is desired to maintain 20% of vegetative community in early seral stage.

McAlmond Canyon-Hauser Mountain. Burning is proposed for hazard reduction and wildlife habitat enhancement. It is desired to maintain 20% of vegetative community in early seral stage.

Stephens' Kangaroo Rat Preserves are managed cooperatively with the Riverside County Habitat Conservation Agency and the US Fish and Wildlife Service. Burning is proposed for

hazard reduction and wildlife habitat enhancement. It is desired to maintain 30% of vegetative community in early seral stage.

CA-067 **EL CENTRO FIELD OFFICE**

A. Desired Resource Management

1. East Mesa Polygon

This polygon is comprised of those public lands in Imperial County east of the East Highline Canal that are part of the CDCA, including the Algodones Dunes/Imperial Sand Hills. Elevations range from approximately sea level at the East Highline Canal to 2,178 feet at Quartz Peak.

East Mesa is part of the greater Sonoran Desert characterized by a subtropical high pressure belt and "rainshadow" from coastal mountain ranges resulting in three to five inches of rainfall per year. Summertime temperatures are consistently over the 100's. Winters are mild (70's) and rarely fall below freezing. The East Mesa polygon includes a variety of landforms including valleys, bajadas, pediments, alluvial fans, rough-hewn mountain ranges, washes, and one of the largest complexes of sand dunes found in the United States. Creosote bush scrub is the dominant vegetation type with communities of desert dry-wash woodlands interspersed.

2. West Mesa Polygon

This polygon contains those checker boarded public lands within northwestern Imperial County, including San Felipe Creek/San Sebastian Marsh. Elevations range from approximately -229 feet below sea level on the east, where they abut the Salton Sea, to approximately 1,800 feet within the Fish Creek Mountains which are situated within the southwest quadrant of the polygon.

The West Mesa, like East Mesa is part of the greater Sonoran Desert characterized by a subtropical high pressure belt and "rainshadow" from coastal mountain ranges resulting in three to five inches of rainfall per year. Summertime temperatures are consistently over the 100's. Winters are mild (70's) and rarely fall below freezing. The West Mesa polygon is comprised of a variety of landforms including valleys, bajadas, pediments, alluvial fans, rough-hewn mountain ranges, washes, and San Sebastian Marsh, which is provided water through San Felipe Creek creating one of the few remaining suitable habitats for the Federally-listed-as-endangered desert pupfish.. Creosote bush scrub is the dominant vegetation type with communities of desert dry-wash woodlands interspersed.

3. Yuha Desert Polygon

The Yuha Desert polygon is comprised of those public lands in the southwest quadrant of Imperial County, including the Carrizo Badlands and the Coyote Mountains. Elevations range from approximately sea level on the east, where they abut the West Side Main Canal, to 2,292 feet at Mountain Springs and 2,408 feet at Carizzo Mountain.

The Yuha Desert is part of the greater Sonoran Desert characterized by a subtropical high pressure belt and "rainshadow" from coastal mountain ranges resulting in three to five inches of rainfall per

year. Summertime temperatures are consistently over the 100's. Winters are mild (70's) and rarely fall below freezing. The Yuha Desert polygon is comprised of a variety of landforms including valleys, bajadas, pediments, alluvial fans, rough-hewn mountain ranges, washes, and small sand hills, providing suitable habitat for the Federally-listed-as-threatened flat tailed horned lizard. Creosote bush scrub is the dominant vegetation type with communities of desert dry-wash woodlands intersperse, yet a native palm oasis is found at Mountain Springs.

4. Eastern San Diego County Polygon

All of the Eastern San Diego County polygon is within the California Department of Forestry (CDF) Direct Protection Area. The CDF Direct Protection Area is characterized as chaparral brushlands within the wildland-urban interface and includes those portions of the public lands which lie outside the boundaries of the CDCA. BLM administers approximately 99,000 acres of public land in this area, which are adjacent to the southwest boundary of the CDCA in eastern San Diego County.

Public lands in this polygon occur in a scattered fashion, with the largest blocks being McCain Valley (In-Ko-Pah Mountains) and Canebrake/Potrero (Sawtooth Mountains).

Chaparral vegetation type covers most of the public lands within the zone. However, there are isolated grasslands, woodlands, riparian areas and coniferous forests. There are over 26 sensitive plant species occur within the area and several Federal/State animal species listed as endangered or threatened species, including bighorn sheep.

B. Current Wildland Fire Situation

1. East Mesa Polygon

This polygon is characterized by a history of low fire activity. Fire history shows 23 fires between 1987 and 1996, averaging 1 to 4 fires per year. None of these fires were significant, enlarging into an extended attack or a second burn period. This is owing to lack of continuous fine fuels which is a result of low annual rainfall and high to very high average annual temperatures. Historically, fires have occurred in this polygon when very high pre-season precipitation conditions exist. When high fuel conditions exist, fires carry well with a high rate of spread through the annual grass component consuming the scrub component. Fires in these high fuel loading years can produce fires 2-6 foot flame length and are moderately resistant to suppression. Approximately 95% of fires are man caused as this desert area has moderate to high recreational use. Although fire is undesired in this polygon and full suppression will be employed to achieve management goals, a customary decadal acreage of 1,000 acres has been set to reflect a maximum target.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months. Mixing and dispersal are very good. Light flashy fuels will produce smoke for a short period of time.

2. West Mesa Polygon

This polygon is characterized by a history of low fire activity with a fire history showing only 4 fires have occurred between 1987 and 1996, averaging approximately 1 fire every 2.5 years. This is owing to lack of continuous fine fuels which are a result of low annual rainfall and high to very high average temperatures. Historically, the fires that have occurred in this polygon are concentrated to the higher more rugged areas to the west and then only when very high pre-season precipitation conditions exist. When high fuel conditions exist, fires carry well with a high rate of spread through the annual grass component consuming the scrub component. Fires in these high fuel loading years can produce fires 2-6 foot flame length and are moderately resistant to suppression. Approximately 50% of fires are man caused in this desert area. Although fire is undesired in this polygon and full suppression will be employed to achieve management goals, a customary decadal acreage of 1,000 acres has been set to reflect a maximum target.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months. Mixing and dispersal are very good. Light flashy fuels will produce smoke for a short period of time.

3. Yuha Desert Polygon

This polygon is characterized by a history of low fire activity, with only 9 fires recorded between 1987 and 1996 or averaging slightly less than 1 fire per year. This is due to lack of continuous fine fuels. This low fuel condition exists due to low annual rainfall and very high average temperatures. Historically, fires have occurred in this polygon when very high pre-season precipitation conditions exist. When high fuel conditions exist, fires carry well with a high rate of spread through the annual grass component consuming the scrub component. Fires in these high fuel loading years can produce fires 2-6 foot flame length and are moderately resistant to suppression. Approximately 90% of fires are man caused as the Yuha Desert area receives moderate recreational use. Although fire is undesired in this polygon and full suppression will be employed to achieve management goals, a customary decadal acreage of 1,000 acres has been set to reflect a maximum target.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months. Mixing and dispersal are very good. Light flashy fuels will produce smoke for a short period of time.

4. Eastern San Diego County Polygon

Chaparral brushlands dominate this polygon. Urban interface concerns are high as many small communities and scattered residences are found within this polygon. Twenty fires have been recorded as occurring in this polygon between 1986 and 1997 and fire history records that most often they are very resistant to control, with many escaped fires. These chaparral brushlands are known as one of the most fire prone vegetative types and among the most challenging for wildland fire suppression. Rates of spread, burning indexes and fire intensity can be extremely high in this zone. Fire starts during critical fire conditions can result in large project fires. Fire starts during critical fire conditions can result in large project fires. For these reasons the annual average acres burned are over 20,000

acres. California Department of Forestry protects this area as their direct protection area. The primary cause of fire in this area is human related. The most common causes are abandoned campfires, shooting, fireworks and vehicles. Lightning caused fire occurrence in this zone is low.

The normal seasonal trend is for most of the fires to occur between May and November, with the more intense fires occurring later in the season. The fire weather throughout this fire management zone is typical Mediterranean, with high summer temperatures and low relative humidities. Winds are primarily southwest to westerly during the spring and summer. The infamous Santa Ana winds are common during the fall and when they occur drastically influence fire behavior. Prescribed fire is the best means to achieve decadal acreage ends of 5,000 acres.

Smoke management is a sensitive issue owing to population blocks in and near this polygon.

C. Preliminary Fire Management Strategies

The categories used in this Phase I document are derived from the four suggested categories listed in Information Bulletin 97-2031 (February 5, 1997) and are further described on pages 2 and 3 of this FMP.

D. Proposed Fire Management by Polygon

1. East Mesa Polygon

ASR Category B_2.

Use an appropriate mix of initial attack suppression resources coupled with relevant attack strategies to achieve containment objectives. A combination of direct and indirect attack strategies should be utilized to reach containment within the first burning period, maximizing cost effectiveness of suppression activities. Burned acreage does not necessarily need to be minimized below 100 acres. Natural barriers, breaks in fuel continuity, roads/trails and predetermined control pints will be considered and utilized, where appropriate, in determining suppression actions to meet containment/resource objectives. Initial attack normally should not include air tankers. Furthermore, bulldozer use is prohibited unless needed to protect life and property. Suppression of those fires that escape containment objectives will be based upon an appropriate action plan developed from a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on reducing social/economic losses and minimizing suppression costs, rehabilitation costs and resource/environmental damages.

2. West Mesa Polygon

ASR Category B_2.

Use an appropriate mix of initial attack suppression resources coupled with relevant attack strategies to achieve containment objectives. A combination of direct and indirect attack strategies should be

utilized to reach containment within the first burning period, maximizing cost effectiveness of suppression activities. Burned acreage does not necessarily need to be minimized below 100 acres. Natural barriers, breaks in fuel continuity, roads/trails and predetermined control pints will be considered and utilized, where appropriate, in determining suppression actions to meet containment/resource objectives. Initial attack normally should not include air tankers. Furthermore, bulldozer use is prohibited unless needed to protect life and property. Suppression of those fires that escape containment objectives will be based upon an appropriate action plan developed from a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on reducing social/economic losses and minimizing suppression costs, rehabilitation costs and resource/environmental damages.

3. Yuha Desert Polygon

ASR Category A_1.

Use of initial attack forces if feasible, to contain all fires, should, during the first burning period, limit those fires to 100 acres or less 90% of the time. However, initial attack will normally not include air tankers or bulldozers. Should initial attack prove unsuccessful or unfeasible, a Wildland Fire Situation Analysis (WFSA) will be prepared that could include allowing the fire to burn to predetermined control points such as roads or natural barriers.

4. Eastern San Diego County Polygon

ASR Category A.

Use full, sustained and aggressive suppression actions to contain all fires within the first burning period. For suppression of fires that elude containment objectives an appropriate action plan will be developed based upon a Wildland Fire Situation Analysis (WFSA). Emphasis will be placed on protection of life and property, reducing social/economic losses and minimizing suppression costs, rehabilitation costs, and resource/environmental damages (use of dozers and air tankers is approved).

CA-068 **BARSTOW FIELD OFFICE**

A. Desired Resource Management

1. West-Central Mojave Polygon

This Mojave Desert area includes all lands within the direct protection area (DPA) of the resource area west and south of Baker, California. There is approximately 1.7 million acres of public land within this polygon. Annual rainfall varies substantially year to year and averages approximately four inches. Except for occasional widely scattered thunderstorms during the summer months, precipitation falls primarily from November through March.

This area is dominated by desert scrub communities. Mojave Creosote Bush Scrub is the primary component of these communities. Other components include: Playas, Desert Salt Bush Scrub, Mojave Mixed Woody Scrub, Desert Sink Scrub, Mojave Wash Scrub and small amounts of Joshua Tree Woodlands above 3,000 feet. Varying amounts of perennial grasses are scattered throughout this polygon. Annual plant production varies tremendously with varying rainfall year to year and the amount of soil disturbance created by activities such as livestock grazing, off-highway vehicle use and wildfire. Production of annuals can vary from near zero to over one ton per acre. Primary annuals include a mixture of exotic grasses such as *Bromus spp.* and *Schismus spp.* and a variety of exotic and native forbs. The density and mixture of annuals will depend on the amount and time of year precipitation is received, soil nutrient loading and ambient temperatures. The plant communities of the Mojave Desert did not evolve with fire carriers such as the alien annual grasses that are currently invading this polygon. Two genera, *Bromus spp.* and *Schismus spp.* are particularly aggressive and have increased drastically in the western-central mojave desert. Concomitant with these invasions has been an increase in fire intensity and frequency, along with conversion of large regions of desert scrub vegetation to lower diversity annual Mediterranean grasslands. The goal in this polygon is to reasonably minimize acreage burned.

Desert Tortoise (federally listed threatened species) and Mojave Ground Squirrel (state listed threatened species) occur over much of this polygon. The Coolgardie Milkvetch (*Astragalus jaegerianus*) occurs in the northern portion of this polygon, adjacent to the Goldstone/NASA complex, and has been proposed to be federally listed as endangered. Their presence not only affect fire suppression objectives but delineate appropriate tactics. Off road travel of fire engines and equipment, though not prohibited, should be minimized (exceptions: wilderness, wilderness study areas, Harper Lake Allotment, Black Mtn. ACEC; in these areas, off road travel is prohibited). Aerial attack methods should be emphasized to meet suppression objectives. Due to urban interface in this polygon, dozer use is authorized to protect human life and property. Otherwise, dozer use is prohibited without area manager approval.

2. North-East Mojave Polygon

This Mojave Desert area includes all lands within the DPA of the resource area north and east of

Baker, CA. This polygon contains approximately one million acres of public land and is bordered on the west by Fort Irwin and Death Valley National Park, and on the East by the Nevada/California border and the Needles Resource Area. Annual rainfall varies substantially year to year and averages approximately two inches except at the higher elevations which may exceed twelve inches per year. Most precipitation comes in late winter and early spring, occurring as rain in the lower elevations and snow in the higher elevations. Summer precipitation occurs primarily as heavy but localized rainfall, originating from convective thunderheads typical of the summer monsoon season (July-Sept.) in southern California and Arizona. The lightning associated with summer convective cells provides ignition sources for fires which occur at higher elevations.

This area is dominated by desert scrub communities. Mojave Creosote Bush Scrub is the primary component of these communities at elevations below 3,000 feet. Other components below 3,000 feet include: Playas, Desert Salt Bush Scrub, Stabilized & Partially Stabilized Desert Sand Fields, Active Sand Dunes and Mojave Wash Scrub. Above 3,000 feet the primary vegetative component is Joshua Tree Woodland/Mojave Mixed Woody Scrub. Other components above 3,000 feet include: Blackbush Scrub, Bitterbrush-Sagebrush Scrub and Pinyon-Juniper Woodland. The annual variation in precipitation significantly affects production of annual vegetation and capability for sustained spread of fire throughout this polygon. Species composition of vegetation and biomass varies continuously along environmental gradients and increases monotonically with elevation, paralleling a complex elevational/moisture gradient. Generally, plant communities below 3,000 feet do not maintain a stable compositional mix of annuals from stand to stand, nor do they provide significant productivity and continuity to sustain significant fire spread.

Plant communities above 3,000 feet will vary in the amount of annual vegetation growth based on precipitation also. Relative productivity of annual plant species within plant communities does not remain consistent from year to year with the unpredictability of annual biomass an inherent quality of these arid and semiarid ecosystems. However, plant communities above 3,000 feet tend to exhibit susceptibility to fire due to increased annual/perennial fuel loadings and frequency of lightning during summer months. Large fires are not desired in this polygon due to the negative impacts created by excessive loss or damage to, wildlife habitat, sensitive plant species and unusual plant assemblages. Small fires that increase/create diversity within established plant communities are considered representative of the fire regime and the ecological role of fire within these sensitive plant communities.

Desert Tortoise (federally listed threatened species) occur over portions of California Valley and potentially other areas within this polygon. Because of the relative low numbers of these animals the lands within this polygon are not considered critical tortoise habitat. Off road travel of fire equipment is not prohibited except in wilderness, wilderness study areas and ACEC's. However, all off road travel will need to be sensitive to Desert Tortoise and avoid death and/or injury to animals. Aerial attack methods should be emphasized to meet suppression objectives due to long response times of ground forces, limitations created by topographic features and the inaccessibility of most fires occurring in this polygon. Dozer use is prohibited without area manager approval unless needed to protect life and property.

3. Afton-Amargosa Polygon

This polygon is an assemblage of two Mojave Desert river systems. It includes the Amargosa, Willow Creek and Salt Creek drainages, the Mojave River drainage within Afton Canyon Natural Area, the Mojave River overflow drainage to the East & West Cronese Lakes. The Amargosa River, Willow Creek, Salt Creek drainages are found within the North-East Mojave polygon; while the Mojave River, its overflow channel at Basin siding and East/West Cronese Lakes are found within the West-Central Mojave polygon. This polygon, though not a contiguous unit, is composed of similar vegetative characteristics and ecosystem dynamics to warrant a different fire management strategy within the Mojave Desert polygons. The boundaries of this polygon parallel the river, drainage and lake bottoms where riparian plant communities exist. The Amargosa, Willow Creek and Salt Creek drainages are approximately seventy miles long, while the Mojave River/Cronese systems contribute an additional fifteen miles of riparian habitat to this polygon. Total acreage within the polygon is estimated to be 13,600 acres. The river corridors of this polygon traverse through the Grimshaw Lakes, Amargosa River, Cronese Lakes and Afton Canyon ACEC's.

The riparian communities within this polygon contain a rich and distinct series of plant assemblages, varying in response to moisture availability and terrain. Along the river bottoms are large patches of rushes, bulrushes, saltgrass, saltbush and catclaw with scattered thickets of willow and mesquite. Fremont's Cottonwood, fig and date palms occur in some areas. Large areas of Saltcedar, a noxious introduced species, are found within these assemblages and have displaced the native vegetation in many areas of the polygon. It is estimated over 70% of the native vegetation within Afton Canyon ACEC has been replaced. In areas where Saltcedar has begun to dominate, wildlife habitat has become unsuitable, surface flows diminished or quit, and thus available water severely reduced or eliminated. The undesired condition caused by the invasion of this noxious weed puts this entire polygon's native plant assemblages at risk of replacement.

The soil structure associated with this polygon's canyon bottoms and riparian areas is very fragile and breaks down with vehicle use, causing soil loss and damage. Vehicle and mechanical equipment use is prohibited except on established routes so that soil disturbance is minimized. In addition, use of chemical retardants is prohibited due to the adverse impacts they have on aquatic habitats.

Water flow through this polygon is highly variable based on seasonal precipitation, summer thunderstorms, spring flow and Saltcedar density. Consequently, it is not uncommon for surface flow to be intermittent along portions of a drainage, non existent, or vary dramatically from year to year based on climatic factors.

Suppression tactics used in this polygon should emphasize procedures that minimize soil/surface disturbance, limit destruction of desired vegetation and protect aquatic habitats.

4. North Slope San Bernardino Mountains Polygon

This polygon includes all public lands outside the DPA and is generally defined as the North Slope of the San Bernardino Mountains. The California Department of Forestry and Fire Protection (CDF&F) has fire protection responsibility for this entire polygon. The polygon includes all public lands east of the San Bernardino County line along the north slope of the San Gabriel and San Bernardino Mountains to State Route 62 and the resource area boundary in Yucca Valley. The polygon is bordered on the south by the San Bernardino National Forest and the north by the DPA boundary (State Highways 18 & 247 & Bear Valley Road).

Elevations range from 3,000 feet on the valley floor to 6,000 feet in the Bighorn Wilderness Area. Most of the terrain is steep and dissected with north/south running canyons and parallel ridges. Many of the ridges have rocky outcroppings. Average precipitation in this polygon is estimated to range from 4 inches at the lowest elevations to near 10 inches along the crest. Portions of the precipitation come from summer thunderstorms and winter snowfalls of several days duration at the higher elevations. There are approximately 200,000 acres of public land in this polygon

There are a number of different plant communities represented in this polygon. The lowest elevations are dominated by Creosote Bush Scrub communities. The vegetation at the highest elevations along the U.S. Forest Service boundary are best typified by Pinyon-Juniper Woodlands that extend down the slope and integrate into transmountain Chaparral/Yucca intermix communities. Canyons, drainages and spring areas contain riparian vegetation associations along their course. There are several ecotones among the plant communities and associations that create an overall mix of complex vegetative cover. There are several special status plant species in this polygon, including five federally listed endangered or threatened plant species endemic to carbonate soils. These special status plant species are at low risk wildfire due to their position on rocky areas and carbonate/talus slopes. Perennial grasses are important components of this polygon and occur primarily along slopes and higher elevations. Annual production varies with elevation and moisture with a combination of annual forbs and grasses predominate along the valley floors and lower slopes. Annual alien grasses can form very dense continuous stands that intermix with the other plant communities.

Fire is a natural part of the plant communities found in this polygon. Natural fire intervals vary by community, but historically fires tend to be large (1,000+ acres) in this polygon. There is one designated wilderness (Bighorn Mtns.) and one ACEC (Juniper Flats) within this polygon. Terrain is generally very steep and rugged throughout this polygon, these factors combine to limit access for both firefighting and recreational use. This polygon has significant urban interface areas within it. Most urban development is along the valley floors along the north boundary of the polygon. Rural interface and private inholdings spread into the polygon from the urban areas and are scattered throughout. This polygon is at significant risk to wildfire and has a high potential for human caused ignitions.

Desert Tortoise habitat and Mojave Ground Squirrel occur over much of the lower elevations of this polygon. Roads and natural barriers can be utilized for fire suppression actions. Due to high urban

interface occurrence in this polygon, dozers may be used outside of designated wilderness and Juniper Flats ACEC to protect life and property. Historically the use of this type of equipment has been high. The use of chemical fire retardants is prohibited in riparian zones.

B. Current Wildland Fire Situation

1. West-Central Mojave Polygon

Significant fires can occur throughout this polygon when there is adequate annual vegetation production to allow fire spread. Heavy fuel loadings of alien annual grasses generally occur in the mountainous areas and their associated drainages and slopes. Fuel loadings of the alien annual grass component can very from near zero to approximately one ton per acre (typically .25-.75 tons per acre). Exotic and native forbs can contribute up to 0.5 tons per acre of additional annual vegetation. The perennial component can vary from 10-180 tons per acre, with typical areas generating 20-30 tons per acre. Fires occurring during years of heavy fuel loadings can produce 6-15 foot flame lengths and are moderately resistant to control. This polygon is subject to windy conditions which contribute to rapid rates of spread through the light fuels when continuous and heavy annual fuel loadings exist. Fires occurring under these conditions consume the scrub and woodland components and contribute significantly to the type conversion of these plant communities to lower diversity Mediterranean annual grasslands. The invading Mediterranean grassland adapts well to soil and vegetative disturbance created by wildfire and sets up a self perpetuating cycle that increases fuel continuity by occupation of intershrub spaces that typically are not continuous. The altered fire regime that is spreading within this polygon is a direct threat to the desert scrub and woodland communities that evolved with lower fire frequency. In areas where the altered fire regime has been established, native desert perennial grasses, cacti and shrub species have been eliminated.

Historically (1986-1995), fires have occurred in the Opal/Black mountains, Coolgardie-Spear Mountain, Calico/Ord/Granite Mountains, Stoddard Mountain & Valley, Fremont Peak and Silver-Quartzite Mountain areas. Numerous small fires have occurred along highway corridors and within Johnson Valley. During this ten year period, approximately 600 fires have occurred in the polygon. Ignitions within the mountainous areas tend to produce large fires with several fires over this period ranging from 1,000-10,000 acres. Size Class E (300-999 ac.) occur frequently when fuel loadings are heavy. Approximately 90% of the fires in this polygon are human caused. Recreational activities and illegal shooting have been the primary cause of ignition. Owing to budgetary limitations and staffing priorities during this ten year period, the effectiveness of fire prevention efforts has been minimal.

Urban and rural interface occurs throughout this polygon. Established communities are numerous and include: Apple Valley, Victorville, Adelanto, El Mirage, Silver Lakes/Helendale, Barstow, Hinkley, Daggett/Yermo, Newberry Springs, Lucerne Valley, Yucca Valley, Landers, Joshua Tree and Twentynine Palms. There is no restrictions on equipment and tactics in these interface areas.

Smoke management concerns are present in this polygon due to the large number of communities and rural residences. Prescribed fires will seldom be a factor in this polygon with the exception of

occupancy trespass structural removals. Although fire is undesired in this polygon and full suppression will be employed to achieve management goals, a customary decadal acreage of 1,000 acres has been set to reflect a maximum target.

2. North-East Mojave Polygon

Fire occurrence within this polygon is low. Fire history shows ten fires between 1986 and 1995. Fire size has varied according to fine fuel loadings which are dependant on annual precipitation amounts and patterns. During most years, continuity of fine fuel below 3,000 feet is negligible and consequently fires in this zone rarely exceed one acre. They occur along highway corridors and areas of recreational activity where human causes predominate. Above 3,000 feet, wildfire ignition is most often caused by lightning with fires generally not exceeding ten acres. It is rare for fires in this zone to exceed 100 acres, due to vegetative variations from stand to stand, and low fine fuel loadings. Fine fuel loadings will vary, but average 500 pounds per acre in this zone. Fuel loadings for brushy/scrub species will range from 600-900 pounds per acre. This polygon is subject to windy conditions which can contribute to increased spread potential where optimum fuel conditions exist. The fire regime in this polygon has not been significantly impacted by the invasion of alien annual grassland and retains fire frequency levels congruent with historical occurrence. Because large portions of this polygon are wilderness and wilderness study area coupled with steep rugged terrain, aerial suppression tactics have historically been successful. Initial attack activities have emphasized aerial attack methods such as helicopters with helishot personnel to provide cost effectiveness in meeting resource management objectives. Long response times, inaccessible terrain and interim wilderness/wilderness study area guidelines have limited the effectiveness and applicability of ground attack resources on most fires.

Historically, human caused fire occurrence has been associated with the highway 127, 178, 190, Old Spanish Trail and Pahrump Valley Road corridors. Historical lightning fire occurrence has been associated with the Kingston and Funeral Mountains and the Nopah, Resting Springs and Greenwater Ranges. Overall, fire occurrence is approximately 50% human caused and 50% lightning caused.

Urban and rural interface occurs primarily near the communities of Baker, Shoshone, Tecopa and Death Valley Junction. A few scattered ranches occur in Chicago and California Valleys.

Smoke management concerns in this polygon are minimal. Inversions are rare in the summer months, mixing and dispersion are very good. Prescribed fires have not been a factor in this polygon and are not anticipated with the exception of occupancy trespass structural removals.

3. Afton-Amargosa Polygon

Fire occurrence in this polygon is low. Fire history shows six fires between 1986 and 1995. Fire size has varied from 1-10 acres based on dead fuel loadings and the continuity of vegetation. The most significant factor contributing to spread potential in this fuel model is the dead fuel component. Fires within this polygon are normally very intense with low rates of spread. Dead fuel loadings of 2 to 3 tons per acre are required; otherwise, fire spread is generally minimal through the riparian vegetation.

All unplanned ignitions occurring between 1986 and 1995 were human caused fires, originating from arson or associated with recreational activities.

Historical fire occurrence has been primarily associated with the Amargosa Canyon and the Willow Creek tributary. Where the Amargosa River runs along Highway 127 near Shoshone, roadside fires have occurred in dry bulrush stands. One wildfire has occurred in Afton Canyon near the Afton Canyon campground.

Fire suppression tactics have emphasized methods to minimize surface disturbance and adverse impacts to vegetation while protecting aquatic/wetland habitats from destruction. Engines have been used along established routes, however, most initial attack operations have utilized hand crews deployed by air and/or ground. Although fire is undesired in this polygon and full suppression will be employed to achieve management goals, a customary decadal acreage of 1,000 acres has been set to reflect a maximum target.

Urban and rural interface is minimal and exists only at Death Valley Junction, Shoshone and Tecopa. Threats to the interface from unplanned/planned fires are considered to be nonexistent.

Smoke management concerns are present in this polygon due to the Interstate 15 and Highway 127 corridors and established communities along the upper Amargosa River. Inversions are rare in the summer months with good mixing and dispersion. Most impacts should be of short duration.

4. North Slope San Bernardino Mountains Polygon

Significant fires can occur throughout this polygon. Heavy fuel loadings occur in association with the Chaparral and Pinyon-Juniper Woodland communities. Heavy fuel loadings of alien annual grasses at the lower elevations occur when there is adequate annual precipitation. Fuel loadings of the alien annual grass component will vary from near zero to approximately one ton per acre. Exotic and native forbs can contribute up to 0.5 tons per acre of additional annual vegetation. The polygon is subject to windy conditions which contribute to rapid rates of spread, extreme flame lengths, long and short range spotting problems and high resistance to control. Fires have a tendency to become large and create significant threats to the urban/rural interface. The prevailing wind pattern is southwest to west and has the tendency to push fires down slope from higher elevations to the valley floor.

Between 1986 and 1995 there were approximately 40 fires in this polygon. They have been distributed throughout. Human caused fires tend to be adjacent to highway corridors, urban/rural interface and recreational areas. Lightning caused fires tend to be randomly occurring throughout and primarily at the higher elevations and mid slope areas. Overall, fire occurrence has been approximately 60% human and 40% lightning caused. Recreational activities, vehicles and illegal shooting have been the primary human causes, however, there has been an increasing arson fire problem on public and private lands within the polygon. Due to budgetary limitations and staffing priorities the effectiveness of fire prevention efforts has been minimal. This polygon is entirely within the DPA of CDF&F and is currently protected by fire stations located in Phelan, Hesperia, Lucerne Valley and Yucca Valley.

Bureau of Land Management (BLM) Agency Representatives respond to wildfire incidents when they occur. Fire prevention responsibilities remain with the BLM.

Urban and rural interface occurs throughout this polygon. Established communities include: Apple Valley, Hesperia, Lucerne Valley, Flamingo Heights, Pioneer Town, Rimrock and Yucca Valley. Rural residences are scattered due to the checker board ownership pattern. There is no restriction on equipment and tactics in interface areas or where threats to life and property exist.

Smoke management concerns are present within this polygon due to the large number of communities, rural residences, businesses and heavy fuels. Dispersal should be good, however, inversions are possible in valley bottoms. Prescribed fire activities have not been significant so far, but will have to be closely coordinated with other agencies when planned to achieve decadal acreage ends of 1,000 acres.

C. Preliminary Fire Management Strategies

The categories used in this Phase I document are derived from the four suggested categories listed in Information Bulletin 97-2031 (February 5, 1997) and are further described on pages 2 and 3 of this FMP.

D. Proposed Fire Management by Polygon

1. West-Central Mojave Polygon

ASR Category A.

Use full, sustained and appropriate suppression actions to contain all fires during the first burning period and limit fire size to 100 acres or less 90% of the time. Initial attack will emphasize the appropriate mix of personnel and equipment to accomplish fire and resource management objectives within Wilderness and/or Wilderness Study Areas, Critical Tortoise Habitat and urban/rural interface. Appropriate responses for initial attack will be designed and incorporated in the Fire Management Activity Plan (FMAP), District Dispatch Plan and Computer Aided Automatic Dispatch System (CAD). Initial attack will normally not include dozers unless approved by the Area Manager, however, their use to protect life and property is approved. Aerial attack methods are an appropriate tool to minimize the adverse impacts of wildfire size, soil disturbance and habitat loss. Should initial attack prove unsuccessful and the fire escape containment objectives a WFSA will be prepared to determine fire suppression strategies and select the most appropriate action plan to protect life and property, reduce social/economic losses and minimize suppression costs, rehabilitation costs and resource/environmental damage.

The goal in this polygon is to reduce and minimize burned acreage and protect life and property. The implementation of a dynamic fire prevention effort in conjunction with a suppression program is recommended because of the effectiveness of this method to mitigate the human caused fire problem

that exists in this polygon. The benefits gained through prevention of unplanned ignitions will reduce fire frequency, burned acreage, suppression costs and threats to public life and property. This desired outcome is commensurate with resource management goals and objectives to minimize losses within the mojave desert plant communities and mitigate changes in the fire regime.

Maximum acceptable burned acreage is 30,000 acres per decade, under any fire intensity level.

Prescribed burning for research will be the predominant form of planned ignitions in this polygon. Wildfire is believed to promote the establishment of alien annual grasslands (AAG's), but fires occurring in different seasons may have contrasting effects. For example, "early season" fires taking place as AAG's begin to cure, but before seeds have fully matured and dispersed to the ground, could destroy a large percentage of the years seed production. In addition, early season fires may reduce the seed banks of AAG's to a greater degree than that of native forb species because of the differential germination requirements of AAG's compared to native forb species. The factors governing these relationships need to be understood so that we can avoid population losses of native plants and increases in the fire regime within this polygon. The desired outcome is to utilize research burning to determine the effectiveness of planned ignitions to reduce densities of AAG's, prepare sites for the revegetation of native plants and develop recommendations and guidelines for enhancing the success of restoration efforts within the Mojave, Colorado and Sonora deserts. Research prescribed burns are not limited by number, but should not exceed 20 acres per year. They will not occur in Critical Desert Tortoise Habitat without Area Manager approval.

2. North-East Mojave Polygon

ASR Category B_2.

Use appropriate mix of initial attack suppression resources coupled with appropriate attack strategies to achieve containment objectives within the first burning period and limit fire size to 100 acres or less 90% of the time. A combination of direct and indirect attack strategies will be utilized to reach containment/resource objectives in the most cost effective manner. Burned acreage does not necessarily need to be minimized below 100 acres. Natural barriers, breaks in fuel continuity, roads/trails and predetermined control points will be considered when determining suppression strategies and tactics. "Light hand on the land" tactics should be implemented where possible. Initial attack will not normally include air tankers unless unusual conditions warrant their use or the maximum allowable acreage objective is challenged. Dozer use is prohibited without Area Manager approval unless needed to protect life and private property.

Appropriate responses for initial attack will be designed and incorporated in the FMAP, District Dispatch Plan and CAD. Aerial attack methods, except air tankers, are appropriate initial attack tools and should be emphasized where appropriate. Should initial attack prove unsuccessful and the fire escape containment objectives, a WFSA will be prepared to determine fire suppression strategies and select the most appropriate action plan to protect life and property, reduce social/economic losses and minimize suppression costs, rehabilitation costs and resource/environmental damages.

The goal in this polygon is to utilize specific parameters to maximize the role naturally occurring wildfires play within ecosystem dynamics. Since the susceptibility of vegetation to fire, potential intensities and the effects of fire on the vegetation all vary continuously along elevational/moisture gradients within this polygon, the establishment of acceptable acreage limitations of 100 acres or less are pertinent and within the known historical fire regime. The design and application of appropriate suppression tactics will minimize unacceptable disturbance to established vegetative and wildlife communities while allowing the natural role of wildfire to operate within established parameters.

Maximum acceptable burned acreage is 1,000 acres per decade, under any fire intensity level.

Management ignitions are not planned for this polygon at this time. The goal is utilize the role of naturally occurring wildfire under established parameters to accomplish fire and resource management objectives.

3. Afton-Amargosa Polygon

ASR Category C.

Use appropriate mix of initial attack suppression resource with appropriate tactics to meet resource and confinement objectives within established constraints while limiting fire spread to 100 acres or less 90% of the time. Line construction and burning out may be done to complete confinement objectives if natural barriers and fuel conditions do not create containment. Fires burning under these conditions will receive appropriate attention by qualified personnel to insure confinement until declared out.

The goal in this polygon is to utilize planned and unplanned ignitions to eliminate undesired decadent stands of monotypic vegetation, such as Saltcedar, and thus aid the reestablishment of diverse stands of native riparian vegetation. In many areas, the exclusion of fire has allowed the development of large decadent stands of Saltcedar and other vegetation. Where these decadent stands exist, fire will be used as a tool to reduce fuel loadings and create access so that follow up management techniques, such as herbicide application can be effectively used to kill Saltcedar. This will allow diverse successional stages of native vegetation to reestablish riparian communities that enhance wildlife populations and increase surface/available water.

Initial attack strategies and tactics will emphasize indirect attack and "light hand on the land" methods to minimize surface disturbance and prevent adverse impacts to aquatic habitats and native vegetation. Vehicles are restricted to established routes. Burned acreage does not necessarily need to be minimized below 100 acres. Natural barriers, fuel continuity, roads/trails, river/creek channels, predetermined control points and suppression costs will be considered when determining confinement strategies. Initial attack will not include air tankers. Dozer are prohibited unless needed to protect life and private property.

Appropriate responses for initial attack will be designed and incorporated in the FMAP, District

Dispatch Plan and CAD. Aerial attack methods, except air tankers, are appropriate initial attack tools and should be emphasized where appropriate. Should initial attack prove unsuccessful and the fire escape containment objectives, a WFSA will be prepared to determine fire suppression strategies and select the most appropriate action plan to protect life and property, reduce social/economic losses and minimize suppression costs, rehabilitation costs and resource/environmental damage.

Maximum acceptable burned acreage for planned and unplanned fires is 2,000 acres per decade, under any fire intensity level.

Planned management ignitions will be the primary tool for accomplishing the desired resource management outcomes of this polygon. Prescribed burns will target areas in need of treatment by priority. If unplanned ignitions do not occur, the goal will be to burn 2,000 acres per decade. Prescribed fire activities may be curtailed if decadal burn targets are reached through unplanned ignitions.

4. North Slope San Bernardino Mountains Polygon

ASR Category B.

Use full, sustained and appropriate suppression actions to contain all fires during the first burning period and limit fire size to 10 acres or less 90% of the time. Initial attack should emphasize the appropriate mix of personnel and equipment to accomplish fire and resource management objectives within Wilderness, ACEC's, Critical Desert Tortoise Habitat, sensitive plant habitat and urban/rural interfaces. Initial attack may include air tankers and/or dozers to protect life and property. Appropriate responses for initial attack will be designed and incorporated in the CDF&F/BLM cooperative agreement, operating plan and BLM FMAP so that fire and resource management objectives are met. Should initial attack prove unsuccessful and the fire escape containment objectives, a WFSA will be prepared to determine fire suppression strategies/tactics and select the most appropriate action plan to protect life and property, reduce social/economic losses and minimize suppression costs, rehabilitation costs and resource/environmental damage.

The goal in this polygon is to minimize burned acreage and protect life and property commensurate with the objectives and constraints established within the FMAP, CDF&F cooperative agreement and operating plan. Within wilderness and ACEC's, the goal is to minimize burned acreage in the same manner with modifications to types and kinds of suppression equipment so that unacceptable resource damage does not occur. Within wilderness and ACEC's dozer use and fuel breaks/line construction are prohibited without Area Manager approval, vehicle use is restricted to established routes, "light hand on the land" tactics are required and use of chemical fire retardants in riparian zones is prohibited. The goal is also to reduce the future need for aggressive suppression activities by the development of fuels management, prescribed fire and other strategies that reduce or eliminate risk to life and property.

The implementation of an effective fire prevention effort is an example of other strategies and is

recommended due to the need to mitigate the human caused fire problem. The benefits gained through prevention of unplanned ignitions would reduce unacceptable resource loss and damage and threats to life and property. An effective fire prevention program would provide quality and timely Agency Representation to insure CDF&F compliance with operating plan procedures as well as conduct fuel hazard inventories and develop agency/interagency strategies for hazardous fuel reduction.

Maximum acceptable burned acreage is 5,000 acres per decade, under any fire intensity level.

Planned management ignitions and/or mechanical treatment will be the primary tools for accomplishing desired resource management outcomes in fuels management and resource protection. Prescribed burning will be used where safe and will target hazardous fuel areas by priority. Desired resource management outcomes are prevention of spread of planned/unplanned ignitions to and from wilderness, ACEC's and private property adjacent to public lands. Location and types of fuels management projects, seasonality and numbers and sizes of planned ignitions need to be determined. Prescribed burn activities may be curtailed if decadal burn targets are reached through unplanned ignition.

CA-069 **NEEDLES FIELD OFFICE**

A. Desired Resource Management

1. Colorado-Bristol Polygon

This polygon is located in the southeastern Mojave desert. The Colorado River Valley to the east, Nevada state line to the north and the southern boundary of the Needles Field Office Resource, the Mojave Preserve to the northwest boundary. The major fuel type in this polygon consist primarily of Sonoran creosote brush and desert perennial shrub with increases of native annuals and exotic grasses with increased amount of rainfall. The annual rainfall in this polygon is 4 to 6 inches of moisture with the higher elevations receiving 6-8 inches of moisture. The majority of the rainfall usually comes during the summer thunderstorms, but this polygon will receive rainfall in the winter as well. It is possible to have two periods of growth in one calendar year once in the spring and then again in the fall. All of the desert area in California can be subject to extreme changes in precipitation amounts which is due to drought or El Nino type of weather patterns. There are several wilderness acres in this polygon. The Dead Mountains is 48,850 acres and is located 12 miles northwest of Needles, California, the mountains run north to south and rises to an elevation of 4,000 feet. The Bigelow Cholla Gardens is 10,380 acres and is located 18 miles west of Needles, California and contains the densest concentration of Bigelow Cholla cactus. The western edge of this wilderness area is located in the Ward Valley Polygon. The Chemehuevi Mountains is 64,320 acres located 12 miles southeast of Needles California and contains dense stands of cholla and other cactus and is inhabitated by desert tortoise, big horn sheep, wild burros and desert mule deer. The Whipple Mountains is 77,520 acres and is located 10 miles northwest of Parker, Arizona. The topography ranges from valley floors and washes to steep walled canyons, domed peaks and eroded spires rising to 4,000 feet. The vegetation includes stands of palo verde, ironwood, smoketree, cholla, saguaro foxtail and mojave prickly pear cacti which supports a variety of wildlife. Kelso Dunes which covers 129,580 acres within this wilderness lies two sweeping valleys: the rolling Bristol Mountains and the Kelso dunes which are the second tallest dunes in the California Desert. The Bristol Mountains wilderness area is 68,515 acres. A portion of the rolling Bristol Mountains and a tilted volcanic plain from this wilderness. The vegetation in this polygon is very sparse with heavy fuel loads in the drainages and canyons as well as along the highways. The Trilobiten wilderness encompasses a large portion of the rugged Marble Mountains and includes long alluvial fans on both sides of the range. This wilderness area is 31,160 acres in size and is home to one of the larger and more rapidly growing desert bighorn sheep herds in the eastern Mojave Desert. The 174800 acre Sheephole Valley Wilderness separates the Sheephole Mountains and Calumet Mountains. Bighorn sheep make their home within the Sheephole range. The Cadiz Dunes Wilderness, with their unique flora and fauna are the vocal point of this wilderness. The 39,740 acres of wilderness is covered with low dunes formed from the winds pushing sand from Cadiz Dry Lake. The vegetation type in this polygon primarily consist of annual grasses. Their are several major routes of travel in this polygon, which are Interstate 40, state highway 95 and several county roads that are in this area and several recreation areas as well in this polygon, such as Chemehuevi wash. In this polygon their are several power and gas line utility right of ways. Their are several small town sites along National Trails Highway (Old route 66) that we will

aggressively suppress fires in and around these town sites.

2. Ward Valley Polygon

This polygon is situated in the middle of the Bristol Colorado Polygon, Nevada state line to the north and the Mojave Preserve to the northwest. Creosote scrub brush, a variety of native as well as non native grasses, with a variety of cactuses are the majority vegetation type in this polygon. The rainfall amount in this polygon can vary from 2 to 4 inches in the south end with 6 to 8 inches in the north with most of the rainfall coming in the form of summer thunderstorms. In this polygon it is possible to have a spring and a fall growth period, especially the annual and exotics grasses. This polygon covers the tortoise habitat exclusively. In this polygon there are several wilderness areas. There are several major roads that either borders or goes through this polygon. They are Interstate 40, National trails highway (old highway 66) and Goffs road, as well as several county roads. There are also several power and gas utility right of ways in this polygon. During the warm summer months the majority of the vegetation fires are caused by equipment use fire starting numerous small fires with the potential to become large fires into the vegetation, lighting caused fires are also very common to this polygon causing large fires. The primary fire carrier is the fine grasses which can cause large acreage fires in a minimal amount of time. Fire occurrence in this polygon will vary with the fuel loading depending on the rainfall amount and the time of year that the rainfall is received. There are a couple of small town sites in this polygon which are Essex and Goffs. This polygon is especially sensitive due to the fact that this area is critical tortoise habitat and that any change in habitat caused by a wildland fire could adversely affect the current tortoise population.

3. Old Womans Polygon

This polygon is in between the Bristol polygon and the Ward Valley polygon. The Old Womans Polygon covers the Old Womans Wilderness. The 146,020 acre wilderness is very diversified in flora and fauna. Topography ranges from 800 feet at the lower elevations and rises more than 5,300 feet to the summit of Old Woman Peak. Creosote brush scrub covers the lower elevations, mixing with desert scrub and grasslands continuing to the highest elevations juniper-pinyon woodland growth. The mountain range is habitat to bighorn sheep and desert tortoise and the rocky outcrops and rugged peaks of the range provide homes for numerous raptors. Rainfall can vary from six to ten inches of moisture in a year, most of the moisture coming in summer thunderstorms. Fires in this polygon are generally small in size except for fires at the higher elevation. These fires can have intense burning and historically have consumed large acreage of the pinyon-juniper woodlands. This area we would like to introduce prescribed fire to reduce the amount of vegetation build up and burn 100 to 200 acre patches to open up stands of pinyon and juniper. The use of surface disturbing equipment is prohibited.

4. Hart Polygon

The Hart polygon lies along the Nevada State line surrounded by the Mojave Preserve. The vegetation is mixed desert shrub and creosote brush with the primary fire carrier being grasses. Within

this polygon their are active mining operations with numerous structures scattered throughout the area. The rainfall in this polygon can very from four to ten inches moisture, this area receives moisture any time of the year including snowfall in the winter. The elevations in this polygon range from 2500 feet to 4500 feet. In this polygon we will not allow fire to freely burn due to the structures and mining operations in the area. The use of surface disturbing equipment may be used, the use of aircraft is authorized.

5. Kingston Polygon

The Kinston polygon is situated in the very northernwestern area of the Needles Resource Area. The Barstow Resource Area to the west, the Shadow Polygon to the south and east This polygon is very diversed vegetation communities with creosote and grasses at lower elevation to pinyon-juniper woodlands and even white fir in the Kingston mountain. The average rainfall is just as diversed with heavy precipitation during summer thunderstorms to winter snowfall. This polygon contains several wilderness areas. The 47,330 acre Mesquite wilderness is one of the three wilderness areas covering the Clark Mountain Range. Plant species include creosote brush sage on the bajadas to blackbrush and Joshua trees at the higher elevations. The Kingston Range wilderness is 206,608 acres, forming 17 miles of continuous ridgeline above 6,000 feet, capped by the 7,300 foot Kingston peak. A stand of white fir grows at the upper elevations of Kingston peak, and over 500 plant species make this wilderness one of the most botanically diverse within the California Desert. The Kingston Mountains are one of four places in California where confirmed sightings of the banded gila monster have been made. In this polygon we will aggressively suppress fires excluding the use of mechanical equipment except for in the wilderness. In the Kingston Mountain range we would like to reduce the fuel load by prescribed burning some 100 to 200 acre patches to open up the pinyon juniper stands for animal habitat.

6. Shadow Polygon

This polygon lies north of I-15 with the resource area boundary to the west and the Nevada state line to the east. A portion of the Mojave Preserve lies in the middle of this polygon. There are several wilderness areas in this polygon. The State line wilderness is 7,050 acres in size and lies on the edge of the California-Nevada border. The rocky, mountainous terrain and isolated portion of the Clark mountains make up the majority of the wilderness. Their are also several active mines in this area. Bighorn sheep cross this wilderness as they migrate between the Clark Mountains and the Spring Mountains which are located in Nevada. The North Mesquite Mountains wilderness is 25,540 acres of Joshua tree woodlands, yucca, cactus, blackbrush and grasses grow within this region, providing habitat for desert wildlife. Plant species include creosote brush sage on the bajadas to blackbrush and Joshua trees at the higher elevations. The average rainfall is just as diverse with heavy precipitation during summer thunderstorms to winter snowfall.

B. Current Wildland Fire Situation

1. Colorado-Bristol Polygon

Fires occur throughout the lower elevation of this polygon. Fire history shows fifteen fires between 1986 and 1995. Fire size will vary according to the fine fuel loadings which are dependent on annual precipitation amounts and patterns. During most years, continuity of fine fuels below 3,000 feet is negligible and consequently fires in this zone rarely exceed one acre. These fires occur primarily along highways, railroad corridors and areas of recreational activity where human causes predominate. The higher elevations of this polygon, 3,000 feet and above, typically have fuel loading for brushy/scrub species ranging from 600-900 pounds per acre. Fires in this zone are more resistant to control and become larger due to the heavier fuel loading, continuous fine fuels and inaccessible terrain. Lightning is the primary ignition source in the higher elevations of this polygon and randomly occur throughout. Fire size generally will be less than one acre depending on fine fuel loadings. There is no recorded large fire history in this polygon, however, the potential exist for large fires during years of greater fine fuel loading. Fires in this polygon are often not detected due to their remote location.

2. Ward Valley Polygon

Fires in this polygon burn actively with high intensity, consuming large acreage. Fires are resistant to control and can become large due to continuous fine fuel loading continuous and inaccessibility. Historically forty fires in a decadal period occur in this polygon, most of the larger fires have occurred in the Clipper and Piute Mountain ranges. These fires exhibit erratic fire behavior due to windy conditions created by thunderstorms. Lightning is the primary ignition source in this polygon. Other sources of ignition is equipment use along the highway and railroad corridors. Primarily high grass production occurs in the mountainous areas and fringes associated with the mountains. Fuel loading in the annual grass component can very from zero to 1 ton per acre (typically .25-.75). The perennial component can vary from 10-180 tons per acre, typical areas will be around 20 ton per acre.

3. Old Womans Polygon

Fires in this mountainous polygon historically have consumed large acreage and are resistant to control due to heavy fuel loading (Pinyon woodlands-100 tons per acre, Brush type 30-50 tons per acre) and inaccessibility. Lower elevation fires below 3,000 intensity depend on the annual grass production (around 0-1 tons per acre). Historical fire occurrence in this polygon is eight fires in a decade, with most fires being of twenty acres or more. Prescribed fire is the best means to achieve decadal acreage ends of 1,000 acres.

4. Hart Polygon

Significant fires in this desert area can occur anywhere in this polygon where there is an adequate annual production to carry the fires. Primarily high grass production occurs in the mountainous acres and their fringes. Heavy fuel loadings of alien grasses generally occur in the mountainous areas and

their adjacent drainages and slopes. Fuel loadings of the alien annual component can very from near zero to approximately zero to one ton per acre. Exotic and native forbs can contribute up to 0.5 tons per acre of additional vegetation. The perennial component can vary in tons per acre with a typical area generating 5-10 tons per acre. This polygon during monsoon season is subject to multiply lightning fires with strong windy condition which contribute to rapid spread through light fuels. Fire occurring under these conditions consume the scrub and woodland components and contribute significantly to the type conversion of these plant communities to lower diversity Mediterranean annual grasslands. The altered fire regime that is spreading within this polygon is a direct threat to the desert scrub and woodland communities that evolved with lower fire frequency. in this area where the altered fire regime has been established, native desert perennial grasses, cacti and shrub species have been eliminated. Fires occurring during years of heavy fuel loadings can produce 6-10 foot flame lengths. Historically there has been 12 fires in this polygon in which some of the fires have consumed large acreage. In this polygon rural wildland intermix exist, there are several mining operations that have main facilities and outbuildings scattered throughout this polygon. Prescribed fire is the best means to achieve decadal acreage ends of 1,000 acres.

5. Kingston Polygon

Historically, fire occurrence in this polygon is low with a decadal average of 12 fires. It is not unusual for fires in this polygon to exceed 100 acres in size. Most of these fires will occur in the higher elevations of the Kingston mountain range. The fuels at the higher elevation (3,000 feet and above) consist of pinyon-juniper woodlands and sage with a large stand of white fir. The fuel at the lower elevations of this polygon are Joshua tree woodlands mixed with native and exotic fine fuel grasses and forbs. Fires in the lower elevation generally does not exceeds ten acres, however the potential for a large fire exist.

6. Shadow Polygon

Fires in this polygon are numerous, fifteen fires a year and generally small in size, usually five acres or less. The Major cause is equipment use. However, historically, there are recorded lightning caused fires also in this polygon and prescribed fire is the best means to achieve decadal acreage ends of 1,000 acres.

C. Preliminary Fire Management Strategies

The categories used in this Phase I document are derived from the four suggested categories listed in Information Bulletin 97-2031 (February 5, 1997) and are further described on pages 2 and 3 of this FMP.

D. Proposed Fire Management by Polygon

1. Colorado-Bristol Polygon

ASR Category B_1.

Use of appropriate mix of initial attack suppression resources coupled with appropriate attack strategies to achieve containment objectives. A combination of direct and indirect attack strategies should be utilized to reach containment within the first burning period and maximize cost effectiveness of suppression activities. Burned acreage does not necessarily need to be minimized below 100 acres. Natural barriers, breaks in fuel continuity, roads/trails and predetermined control points will be considered in determining suppression actions to meet containment/resource objectives. Initial attack should not normally include air tankers. Mechanical equipment use is prohibited unless needed to protect life and property. Suppression of fires that escape containment objectives will be based upon an appropriate action plan developed from a Wildfire Situation Analysis (WFSA). Emphasis will be placed on reducing social/economic losses and minimizing suppression costs, rehabilitation costs and resource/environmental damages.

2. Ward Valley Polygon

ASR Category A_1.

Use full, sustained and appropriate suppression actions to contain all fires within the first burning period. Initial attack will emphasize the appropriate mix of personnel and equipment to accomplish fire and resource objectives within established constraints. Suppression of fires that escape containment objectives will be based upon an appropriate action plan developed from a Wildfire Situation Analysis (WFSA). Emphasis will be placed on protection of life and property, reducing social economic losses and minimizing suppression costs, rehabilitation costs, and resource/ environmental damages.

3. Old Womans Polygon

ASR Category B_2

Use of appropriate mix of initial attack suppression resources coupled with appropriate attack strategies to achieve containment objectives. A combination of direct and indirect attack strategies should be utilized to reach containment within the first burning period with maximizing cost effectiveness of suppression activities. Burned acreage does not necessarily need to be minimized below 10 acres. Natural barriers, breaks in fuel continuity, roads/trails and predetermined control points will be considered in determining suppression actions to meet containment/resource objectives. Initial attack can include the use of air tankers. mechanical equipment use is prohibited. Suppression of fires that escape containment objectives will be based upon an appropriate action plan developed from a Wildfire Situation Analysis (WFSA). Emphasis will be placed on reducing social/economic losses and minimizing suppression costs, rehabilitation costs and resource/environmental damages.

4. Hart Polygon

ASR Category A_1

Use full, sustained and aggressive action to contain the fire during the first burning period. Initial attack may include air tankers and/or bulldozers to protect life and property. Strategy for suppressing fires that escape containment the first burning period is based upon reducing economic losses, private property damages, resource losses, suppression costs, rehabilitation costs, and environmental damages (Escaped Fire Situation Analysis). The need for aggressive full suppression may be avoided through fuels management, prescribed fire, or other strategies which reduce or eliminate the risk to private improvements and life.

5. Kingston Polygon

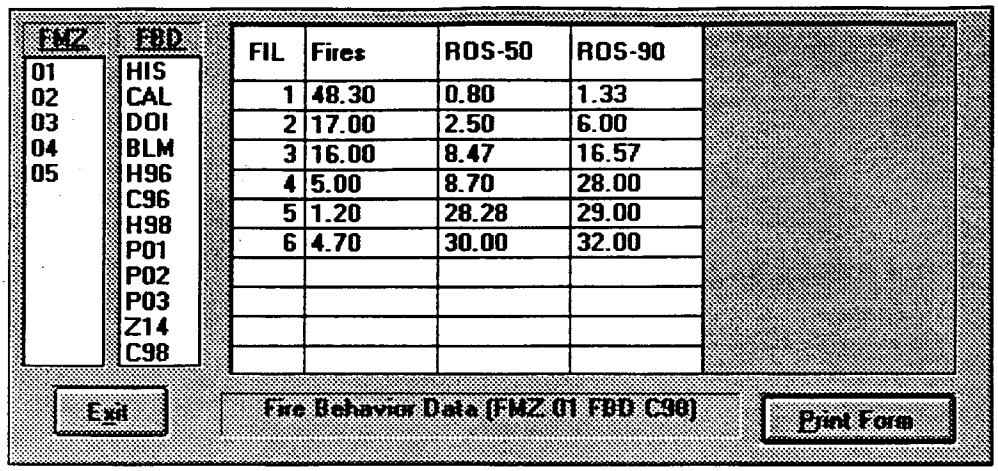
ASR Category B_2

Use of appropriate mix of initial attack suppression resources coupled with appropriate attack strategies to achieve containment objectives. A combination of direct and indirect attack strategies should be utilized to reach containment within the first burning period with maximizing cost effectiveness of suppression activities. Burned acreage does not necessarily need to be minimized below 10 acres. Natural barriers, breaks in fuel continuity, roads/trails and predetermined control points will be considered in determining suppression actions to meet containment/resource objectives. Initial attack can include the use of air tankers. Mechanical equipment use is prohibited. Suppression of fires that escape containment objectives will be based upon an appropriate action plan developed from a Wildfire Situation Analysis (WFSA). Emphasis will be placed on reducing social/economic losses and minimizing suppression costs, rehabilitation costs and resource/environmental damages. In the area of the White Fir stand, full suppression will be used to protect higher value resources. All suppression resources will use appropriate suppression methods to exclude fire from entering the White Fir stand or to neglect the effects of fire that starts in that area.

6. Shadow Polygon

ASR Category A_1

Use full, sustained and aggressive action to contain the fire during the first burning period. Initial attack may include air tankers. Mechanical equipment will be excluded for suppression activities in this polygon. Strategy for suppressing fires that escape containment the first burning period is based upon reducing economic losses, private property damages, resource losses, suppression costs, rehabilitation costs, and environmental damages(Escaped Fire Situation Analysis). The need for aggressive full suppression may be avoided through fuels management, prescribed fire, or other strategies which reduce or eliminate the risk to private improvements and life.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01
02
03
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05
HIS
CAL
DOI
BLM
H96
C96
H98
P01
P02
P03
Z14
C98
FIL | Fires | ROS-50 | ROS-90
1 | 48.30 | 0.80 | 1.33
2 | 17.00 | 2.50 | 6.00
3 | 16.00 | 8.47 | 16.57
4 | 5.00 | 8.70 | 28.00
5 | 1.20 | 28.28 | 29.00
6 | 4.70 | 30.00 | 32.00
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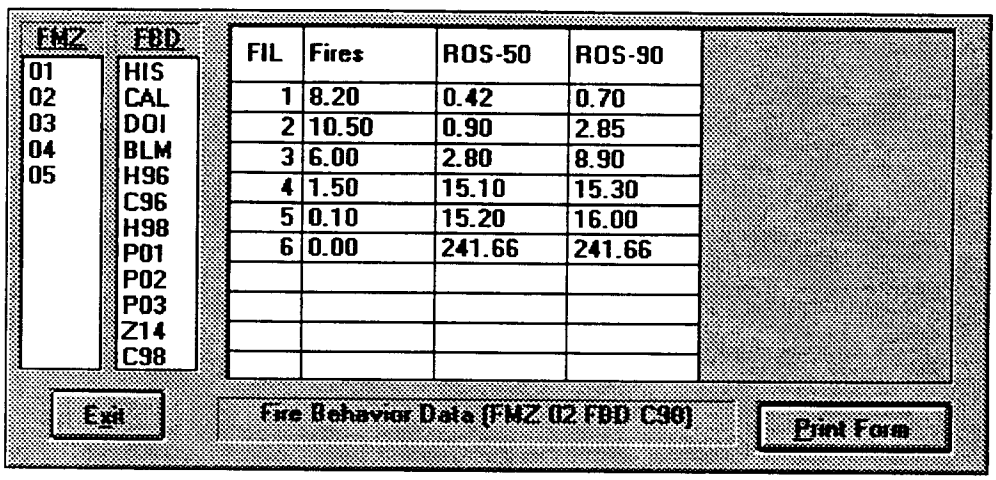
Print Form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BLM
H96
C96
H98
P01
P02
P03
Z14
C98
FIL | Fires | ROS-50 | ROS-90
1 | 8.20 | 0.42 | 0.70
2 | 10.50 | 0.90 | 2.85
3 | 6.00 | 2.80 | 8.90
4 | 1.50 | 15.10 | 15.30
5 | 0.10 | 15.20 | 16.00
6 | 0.00 | 241.66 | 241.66
Exit
Fire Behavior Data (FMZ 02 FBD C98)
Print Form

MRT INPUT TABLE
ANALYSIS ZONE: 01

MASTER RESOURCE TABLE
DOLLAR AMOUNTS NOT INFLATED

UNIT ID	1	2	3	4	5	6	7	8	9	10	11	12
C1AVH2	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00	27.00		
	34	51	64	69	88	77	95	98	90	79		
	1072	1072	1072	1072	1072	1072	1072	1072	1072	1072		
C2AVH3	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00		
	35	56	72	78	101	88	110	113	103	90		
	629	629	629	629	629	629	629	629	629	629		
C2HWH3	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00		
	97	99	135	128	121	55	47	96	143	57		
	629	629	629	629	629	629	629	629	629	629		
E4IMP25	15.00	0.00	15.00	0.00	15.00	15.00	0.00	0.00	15.00	0.00		
	340	0	460	0	55	400	0	0	542	0		
	750	870	990	765	180	870	975	435	1155	1056		
E5APP331	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00		
	73	163	185	260	2811	193	327	327	253	375		
	186	244	294	337	2815	301	402	373	359	390		
E5APP335	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00		
	73	163	185	260	2811	193	327	327	253	375		
	186	244	294	337	2815	301	402	373	359	390		
E5AV3637	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00		
	52	142	165	240	322	172	308	338	232	356		
	672	729	780	823	931	787	888	888	844	876		
E5AV3637A	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00		
	52	142	165	240	322	172	308	338	232	356		
	672	729	780	823	931	787	888	888	844	876		
E5AV3638	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00		
	52	142	165	240	322	172	308	338	232	356		
	672	729	780	823	931	787	888	888	844	876		
E5BBD3131	22.50	9.00	22.50	9.00	22.50	22.50	9.00	9.00	22.50	9.00		
	250	272	138	115	535	325	430	288	122	508		
	352	344	244	193	625	424	496	330	229	513		
E5BDF14	22.50	9.00	22.50	9.00	22.50	22.50	9.00	9.00	22.50	9.00		
	138	228	250	325	392	258	392	408	318	440		
	244	301	352	395	488	359	460	445	416	448		
E5BDF33	22.50	9.00	22.50	9.00	22.50	22.50	9.00	9.00	22.50	9.00		
	115	228	190	265	348	235	348	370	258	418		
	222	301	294	337	445	337	416	409	359	426		
E5BDF55	22.50	9.00	22.50	9.00	22.50	22.50	9.00	9.00	22.50	9.00		
	235	362	310	385	228	332	220	302	378	516		
	337	431	409	452	330	431	294	344	474	520		
E5BDU3585	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00		
	92	182	212	280	302	198	332	318	318	380		
	200	258	316	352	402	301	402	359	416	390		
E5BDU37	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00		
	78	175	168	242	332	198	332	348	242	530		
	186	251	272	316	431	301	402	388	344	534		
E5BDU53	15.00	0.00	15.00	0.00	15.00	15.00	0.00	0.00	15.00	0.00		
	145	0	242	0	400	55	0	0	318	0		
	251	287	344	380	496	164	294	467	416	254		
E5BR3632	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00		
	150	232	270	345	232	285	232	255	368	468		
	765	816	880	924	844	895	816	808	974	984		
E5BR3632C	22.50	9.00	22.50	9.00	22.50	22.50	9.00	9.00	22.50	9.00		
	150	232	270	345	232	285	232	255	368	468		
	265	316	380	424	344	395	316	308	474	484		
E5BR3636	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00		
	150	232	270	345	232	285	232	255	368	468		
	765	816	880	924	844	895	816	808	974	984		
E5HW3631	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00		
	232	285	315	390	428	105	112	390	398	303		
	844	866	924	967	1032	722	700	938	1003	826		
E5HW3631C	22.50	9.00	22.50	9.00	22.50	22.50	9.00	9.00	22.50	9.00		
	232	285	315	390	428	105	112	390	398	303		
	344	366	424	467	532	222	200	438	503	326		
E5HW3639	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00		
	232	285	315	390	428	105	112	390	398	303		
	844	866	924	967	1032	722	700	938	1003	826		
E5JB3635C	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00		
	180	202	75	90	458	255	390	495	105	438		
	794	787	693	679	1060	866	967	1039	722	955		
E5LVD11	22.50	9.00	22.50	9.00	22.50	22.50	9.00	9.00	22.50	9.00		
	295	362	392	460	460	175	242	445	445	373		
	395	431	488	524	553	280	316	481	539	383		

E5M13631	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00
	232	285	315	390	428	105	112	390	398	303
	700	722	780	823	888	578	556	794	859	682
E5M13634	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00
	255	270	180	158	540	322	435	562	58	506
	722	708	650	600	996	787	866	960	533	876
E5MO3635B	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00
	158	180	45	120	435	232	368	472	135	416
	772	765	664	708	1039	844	945	1017	751	934
E5OL3634	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00
	255	270	180	158	540	322	435	562	58	506
	866	852	794	744	1140	931	1010	1104	677	1020
E5RRU35	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00
	205	288	325	400	168	340	288	190	422	523
	308	359	424	467	272	438	359	236	517	527
E5SR3636A	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00
	225	308	345	420	188	360	308	210	442	543
	837	888	952	996	801	967	888	765	1046	1056
E5SW3635	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00
	180	202	135	112	465	255	360	488	110	438
	794	787	751	700	1068	866	938	1032	726	955
E5SW3635A	30.00	12.00	30.00	12.00	30.00	30.00	12.00	12.00	30.00	12.00
	180	202	135	112	465	255	360	488	110	438
	794	787	751	700	1068	866	938	1032	726	955
E6AV3648	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00
	50	133	150	220	290	157	280	310	210	329
	463	519	568	610	715	575	673	673	631	662
E6BBD3143	11.25	4.50	11.25	4.50	11.25	11.25	4.50	4.50	11.25	4.50
	207	230	153	137	460	273	370	487	73	446
	275	268	219	170	541	345	415	506	135	432
E6BR3646	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00
	137	213	243	313	210	257	213	237	330	429
	554	603	666	708	631	680	603	596	757	767
E6DVP03	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00
	323	373	257	240	550	243	393	583	257	224
	696	717	626	577	934	612	738	906	626	497
E6INF41	11.25	4.50	11.25	4.50	11.25	11.25	4.50	4.50	11.25	4.50
	273	290	207	190	527	333	437	553	107	506
	345	331	275	226	611	408	485	576	170	495
E6KRN11	7.50	0.00	7.50	0.00	7.50	7.50	0.00	0.00	7.50	0.00
	148	0	48	0	395	215	0	0	128	0
	219	212	114	156	478	289	387	457	198	376
E6KRN14	7.50	3.00	7.50	3.00	7.50	7.50	3.00	3.00	7.50	3.00
	168	192	122	105	422	235	332	448	100	408
	240	233	191	142	506	310	380	471	169	397
E6SW3645	15.00	6.00	15.00	6.00	15.00	15.00	6.00	6.00	15.00	6.00
	163	187	123	107	417	230	327	443	101	403
	582	575	540	491	848	652	722	813	516	739
E6YUD35	11.25	4.50	11.25	4.50	11.25	11.25	4.50	4.50	11.25	4.50
	427	510	533	463	160	413	337	293	527	586
	506	562	618	513	226	492	380	303	611	579
H2AV554	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
	38	60	79	95	136	82	120	120	104	116
	230	710	1130	1490	2390	1190	2030	2030	1670	1934
H2HP534	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
H3AV554	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	40	67	90	110	160	93	140	140	120	135
	200	600	950	1250	2000	1000	1700	1700	1400	1620
H3HW554A	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	97	99	135	128	121	55	47	96	143	57
	1060	1090	1630	1520	1420	420	310	1040	1750	450
H3SQF523	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O1BSZFMO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	46	63	106	139	248	101	177	215	150	169
	139	143	155	164	194	154	175	185	167	172
O1DFMO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O1JSZFMO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O1MSZFMO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O1RSZFMO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0

	0	0	0	0	0	0	0	0	0	0
O1SSZFMO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O2BSZFCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	30	110	180	240	390	190	330	330	270	314
	105	105	105	105	105	105	105	105	105	105
O2JSZFCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	160	230	320	380	270	340	230	220	450	464
	105	105	105	105	105	105	105	105	105	105
O2MSZFCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	320	350	430	490	470	230	70	280	620	374
	105	105	105	105	105	105	105	105	105	105
O2RSZFCO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O3BSZFTP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O3JSZFPT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O3MSZFPT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O3RSZFPT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
O3SSZFPT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
WTAV3690	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	60	0	210	0	420	220	0	0	300	0
	196	339	463	570	837	481	730	730	624	702
WTHW3691	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	300	0	410	0	560	130	0	0	520	0
	624	677	819	926	1086	321	268	855	1015	577
WTHW3691C	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	300	0	410	0	560	130	0	0	520	0
	491	544	686	793	953	188	135	722	882	444
WTSW3692	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	230	0	170	0	610	330	0	0	136	0
	499	481	392	268	1175	677	855	1086	332	898

MRT INPUT TABLE
ANALYSIS ZONE: 02

MASTER RESOURCE TABLE
DOLLAR AMOUNTS NOT INFLATED

UNIT ID	1	2	3	4	5	6	7	8	9	10	11	12
C1AVH2	18.00	18.00	18.00	18.00	18.00							
	80	79	87	100	63							
	1072	1072	1072	1072	1072							
C2AVH3	4.00	4.00	4.00	4.00	4.00							
	91	90	100	116	70							
	629	629	629	629	629							
C2HWH3	4.00	4.00	4.00	4.00	4.00							
	129	133	67	51	87							
	629	629	629	629	629							
E4IMP25	10.00	0.00	0.00	10.00	10.00							
	512	0	0	535	190							
	1095	1110	1035	1140	450							
E5APP331	10.00	4.00	4.00	10.00	10.00							
	223	275	372	290	170							
	330	337	431	395	280							
E5APP335	10.00	4.00	4.00	10.00	10.00							
	223	275	372	290	170							
	330	337	431	395	280							
E5AV3637	20.00	8.00	8.00	20.00	20.00							
	202	255	353	270	180							
	816	823	916	880	794							
E5AV3637A	20.00	8.00	8.00	20.00	20.00							
	202	255	353	270	180							
	816	823	916	880	794							
E5AV3638	20.00	8.00	8.00	20.00	20.00							
	202	255	353	270	180							
	816	823	916	880	794							
E5BBD3131	15.00	6.00	6.00	15.00	15.00							
	78	145	460	348	340							
	186	208	510	445	438							
E5BDF14	15.00	6.00	6.00	15.00	15.00							
	288	340	437	355	250							
	388	395	488	452	352							
E5BDF33	15.00	6.00	6.00	15.00	15.00							
	228	280	430	348	220							
	330	337	481	445	323							
E5BDF55	15.00	6.00	6.00	15.00	15.00							
	348	400	393	318	70							
	445	452	445	416	179							
E5BDU3585	10.00	4.00	4.00	10.00	10.00							
	258	310	333	228	152							
	359	366	388	330	258							
E5BDU37	10.00	4.00	4.00	10.00	10.00							
	212	265	363	280	190							
	316	323	416	380	294							
E5BDU53	10.00	0.00	0.00	10.00	10.00							
	288	0	0	92	265							
	388	395	258	200	366							
E5BR3632	20.00	8.00	8.00	20.00	20.00							
	330	383	345	270	82							
	938	945	909	880	700							
E5BR3632C	15.00	6.00	6.00	15.00	15.00							
	330	383	345	270	82							
	438	445	409	380	200							
E5BR3636	20.00	8.00	8.00	20.00	20.00							
	330	383	345	270	82							
	938	945	909	880	700							
E5HW3631	20.00	8.00	8.00	20.00	20.00							
	368	427	187	150	262							
	974	988	758	765	873							
E5HW3631C	15.00	6.00	6.00	15.00	15.00							
	368	427	187	150	262							
	474	488	258	265	373							
E5HW3639	20.00	8.00	8.00	20.00	20.00							
	368	427	187	150	262							
	974	988	758	765	873							
E5JB3635C	20.00	8.00	8.00	20.00	20.00							
	68	143	450	382	300							
	686	715	1010	988	909							
E5LVD11	15.00	6.00	6.00	15.00	15.00							
	415	467	250	130	535							

	510	517	308	236	625
E5M13631	20.00	8.00	8.00	20.00	20.00
	368	427	187	150	262
	830	844	614	621	729
E5M13634	20.00	8.00	8.00	20.00	20.00
	120	143	435	360	352
	592	571	852	823	816
E5MO3635B	20.00	8.00	8.00	20.00	20.00
	98	173	480	412	420
	715	744	1039	1017	1024
E5OL3634	20.00	8.00	8.00	20.00	20.00
	120	143	435	360	352
	736	715	996	967	960
E5RRU35	10.00	4.00	4.00	10.00	10.00
	392	445	407	318	70
	488	496	460	416	179
E5SR3636A	20.00	8.00	8.00	20.00	20.00
	412	465	427	338	90
	1017	1024	988	945	708
E5SW3635	20.00	8.00	8.00	20.00	20.00
	82	113	353	285	278
	700	686	916	895	888
E5SW3635A	20.00	8.00	8.00	20.00	20.00
	82	113	353	285	278
	700	686	916	895	888
E6AV3648	10.00	4.00	4.00	10.00	10.00
	183	235	322	243	163
	603	610	701	666	582
E6BBD3143	7.50	3.00	3.00	7.50	7.50
	93	145	372	307	300
	156	163	401	380	373
E6BR3646	10.00	4.00	4.00	10.00	10.00
	297	348	315	243	77
	722	729	694	666	491
E6DVP03	10.00	4.00	4.00	10.00	10.00
	230	235	435	370	430
	598	556	766	745	808
E6INF41	7.50	3.00	3.00	7.50	7.50
	140	178	458	380	373
	205	198	492	457	450
E6KRN11	5.00	0.00	0.00	5.00	5.00
	95	0	0	375	382
	163	191	478	457	464
E6KRN14	5.00	2.00	2.00	5.00	5.00
	62	113	333	268	262
	128	135	366	345	338
E6SW3645	10.00	4.00	4.00	10.00	10.00
	77	108	322	257	250
	491	477	701	680	673
E6YUD35	7.50	3.00	3.00	7.50	7.50
	500	552	512	393	313
	583	590	548	471	387
H2AV554	3.00	3.00	3.00	3.00	3.00
	93	95	131	117	85
	1430	1490	2270	1970	1250
H2HP534	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
H3AV554	1.00	1.00	1.00	1.00	1.00
	107	110	153	137	97
	1200	1250	1900	1650	1050
H3HW554A	1.00	1.00	1.00	1.00	1.00
	129	133	67	51	87
	1540	1600	610	370	900
H3SQF523	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O1BSZFMO	0.00	0.00	0.00	0.00	0.00
	128	139	161	139	117
	161	164	170	164	158
O1DFMO	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O1JSZFMO	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O1MSZFMO	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O1RSZFMO	0.00	0.00	0.00	0.00	0.00

	0	0	0	0	0
	0	0	0	0	0
O1SSZFMO	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O2BSZFCO	0.00	0.00	0.00	0.00	0.00
	230	240	370	320	200
	105	105	105	105	105
O2JSZFCO	0.00	0.00	0.00	0.00	0.00
	400	410	360	320	70
	105	105	105	105	105
O2MSZFCO	0.00	0.00	0.00	0.00	0.00
	580	590	280	290	440
	105	105	105	105	105
O2RSZFCO	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O3BSZFTP	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O3JSZFPT	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O3MSZFPT	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O3RSZFPT	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
O3SSZFPT	0.00	0.00	0.00	0.00	0.00
	0	0	0	0	0
	0	0	0	0	0
WTAV3690	0.00	0.00	0.00	0.00	0.00
	260	0	0	350	230
	552	570	802	713	499
WTHW3691	0.00	0.00	0.00	0.00	0.00
	480	0	0	190	340
	944	980	410	428	695
WTHW3691C	0.00	0.00	0.00	0.00	0.00
	480	0	0	190	340
	811	847	277	295	562
WTSW3692	0.00	0.00	0.00	0.00	0.00
	100	0	0	370	360
	268	232	802	748	730

APPENDIX F

IIAA Options Considered

Option	Description
001	Current Org (H3)
002	Current Org (H2)
005	+HE AV
006	+HE SW
007	+HE MOJ
008	+HE JB
009	+HE AV ~~SW~~ – HE BR
011	HE MOJ, -LT SW
012	+HE JB, -LT SW
013	+HE AV MOJ JB, -LT SW
014	+HE AV MOJ JB, -SW
015	+HE MOJ JB, -SW
016	+HE SR
017	+HE SW JB, -LT SW
018	017 -HE BR, +WT
019	+HE SR MOJ, -LT SW
020	+HE SR MOJ JB
021	+HE SR, -HE BR
022	019 -HE AV BR
023	022 +HE JB
024	023 +LT SW, -HE
026	+WT SW, H2
027	+WT SW, H3
028	+WT HW, H3
029	022 +WT HW
030	+WT SW HW, H2
031	+WT SW HW, H3
032	-WT AV, H3
033	-WT AV, H2
034	-WT AV, +WT SW
035	-WT AV, +WT SW, H2
036	+HE AV JB, +WT
037	+HE AV JB, H3
038	011 +HE JB, +WT SW
039	038 +HE AV
041	~~040, H3~~ C02, THE AV - HE H/TW
042	015 +SW, -HE AV SW
043	014 +SW, -HE SW
044	Current Org. (no Helo)
045	044 +HE MO JB SW
046	045 +WT HW SW
047	046 -HE BR AV SW, -LT
048	001 + 2nd H3 HW
057	002 -HE AV

Option	Description
058	044, -HE AV
059	009, +H3 HW
20A	020 ,-SR
5AS	005, -HE SW
5AW	005, -WT AV
5H3	005, H3
5SA	C05, -LT. SW
CAL	Calibration
HEL	
101	Cur, Tp 3
102	Cur, Tp 2
105	
113	
122	
125	-4 Eng
129	+1 wt
130	+2 wt
144	
158	
IAS	5AS for DOI

5AV C02, -2HEAV

C-98

Definitions	
AV	Apple Valley
BR	Black Rock
JB	Jaw Bone
HW	Hole-in-the-Wall
MOJ	Mojave
SR	Santa Rosa
SW	Salt Wells
HE	Heavy Engine
LT	Light Engine
H2	Medium Helicopter
H3	Light Helicopter

5 5W + H/E - LT. Eng AV

FMP Table 1
Fire Use and Fuels Management Summary

CACDD California Desert District, Option: 5AS

Fire Use / Fuels	Projects	Acres	Labor	Training	Operations	Total Cost
2810 Planning			$	$	$	$125,000
2823 Implementation			$	$	$	$278,250
Report Total	13	4,100	$	$	$	$404,050

FMP Table 2
Line Items Detail

CACDD California Desert District, Option: 5AS

Budget Item	2810 Labor	2823 Labor	2830 Labor	2810 Ops	2823 Ops	2830 Ops	Total Cost	Start	Stop
ADM060AIR	11,053						$11,053		
ADM061BUDG	5,527						$5,527		
ADM061PERS	11,053						$11,053		
ADM061RADO	11,053						$11,053		
ADM063	5,579			1,105			$6,684	06/01	07/31
ADM065	5,579			1,105			$6,684	06/01	07/31
ADM066	5,579			1,105			$6,684	06/01	07/31
ADM068	5,579			1,105			$6,684	06/01	07/31
ADM069	5,579			1,105			$6,684	06/01	07/31
ADMIN	121,585			13,264			$134,849		
C1AVH2	182,022			37,029			$219,051	04/01	09/30
E4IMP25							$		
E5APP331							$		
E5APP335							$		
E5AV3637	128,917			23,765			$152,682	04/01	09/30
E5AV3637A	109,812			23,765			$133,577	04/01	09/30
E5AV3638	128,917			23,765			$152,682	04/01	09/30
E5BDF14							$		
E5BDF33							$		
E5BDU3585							$		
E5BDU37							$		
E5BR3632C							$		
E5BR3636	128,917			23,765			$152,682	04/01	09/30
E5HW3631C							$		
E5HW3639	128,917			23,765			$152,682	04/01	09/30
E5OL3634	128,917			23,765			$152,682	04/01	09/30
E6SW3645	85,617			15,751			$101,368	04/01	09/30
FICC	69,594						$69,594	06/01	07/31
H2AV554				197,852			$197,852	05/15	09/30
H2HP534							$		
H3SQF523							$		
O1BSZFMO	54,094			7,184			$61,278	01/01	12/31
O1DFCO	54,094			7,184			$61,278	01/01	12/31
O1DFMO	79,957			9,948			$89,905	01/01	12/31
O1RSZFMO	54,094			7,184			$61,278	01/01	12/31
O1SSZFMO	54,094			7,184			$61,278	01/01	12/31
O3BSZFTP	19,572			3,978			$23,550	04/01	09/30
O3RSZFPT	19,572			3,978			$23,550	04/01	09/30
O3SSZFPT	19,572			3,978			$23,550	04/01	09/30
VEHICLES				37,249			$37,249		
WTAV3690	19,387			17,906			$37,293	04/01	09/30
Report Total	1,654,232			517,784			$2,172,016		

FMP Table 3
Cost + NVC Summary

CACDD California Desert District

	Option 058	Option 044	Option 5AV	Option 5AS	Option 002
Reimbursable:					
2830 Labor.....	$	$	$	$	$
2830 OPS.....	$	$	$	$	$
Sub-Total 2830.....	$	$	$	$	$
Hazardous Fuels:					
2823 Labor.....	$	$	$	$	$
2823 OPS.....	$	$	$	$	$
Sub-Total 2823.....	$	$	$	$	$
Preparedness:					
2810 Labor.....	$1,362,398	$1,491,315	$1,415,503	$1,654,232	$1,795,619
2810 OPS.....	$259,138	$282,903	$470,254	$517,784	$539,336
Sub-Total 2810.....	$1,621,536	$1,774,218	$1,885,757	$2,172,016	$2,334,955
Total Budget:	$1,621,536	$1,774,218	$1,885,757	$2,172,016	$2,334,955
Suppression:	606,962	625,759	599,431	524,478	554,396
NVC:	2,971,533	2,943,862	2,878,388	1,505,184	2,332,083
Total Cost + NVC:	$5,200,031	$5,343,839	$5,363,576	$4,201,678	$5,221,434
One Time Costs:	$	$	$	$	$

FMP Table 4 (Page 1)
Fire Force Location Summary

CA CDD: California Desert District, Option: 5AS

Equipment Type	ALL	AV	AVHELO	BR	BRA	HITW
IA EQUIPMENT:						
Engine (T5)	6	3		1		1
Engine (T6)	1					
Water Tender (T1)	1	1				
AIRCRAFT:						
Helicopter (T2)	1	1				
SUPPORT EQUIPMENT:						

FMP Table 4 (Page 2)
Fire Force Location Summary

CA CDD: California Desert District, Option: 5AS

Equipment Type	ALL	HRAIR	OLN	PSRA	RRA	SW
IA EQUIPMENT:						
Engine (T5)	6		1			
Engine (T6)	1					1
Water Tender (T1)	1					
AIRCRAFT:						
Helicopter (T2)	1					
SUPPORT EQUIPMENT:						

FMP Table 5
Dollar Summary

CACDD California Desert District, Option: 5AS

Sub-Act: 2810	Program Managmt	Fire Use and Fuels	Administ Support	Preventn	Init Atk/ Supprsn	Total Dollars
Personnel.....	296,333		188,166	58,716	1,111,017	$1,654,232
Equipment.....	6,078		3,316	3,315	42,336	$55,045
Procurement....	6,631		3,316	3,315	33,604	$46,866
Contract.....					182,377	$182,377
F.O.R.....					141,924	$141,924
Travel.....	17,685		7,461	3,315	25,200	$53,661
Training.....	8,290		4,696	1,989	22,936	$37,911
Aviation.....						$
Total	335,017		206,955	70,650	1,559,394	$2,172,016

Sub-Act: 2823	Program Managmt	Fire Use and Fuels	Administ Support	Preventn	Init Atk/ Supprsn	Total Dollars
Personnel.....						$
Equipment.....						$
Procurement....						$
Contract.....						$
F.O.R.....						$
Travel.....						$
Training.....						$
Aviation.....						$
Total						$

Sub-Act: 2830	Program Managmt	Fire Use and Fuels	Administ Support	Preventn	Init Atk/ Supprsn	Total Dollars
Personnel.....						$
Equipment.....						$
Procurement....						$
Contract.....						$
F.O.R.....						$
Travel.....						$
Training.....						$
Aviation.....						$
Total						$

Sub-Act: 2830OT	Program Managmt	Fire Use and Fuels	Administ Support	Preventn	Init Atk/ Supprsn	Total Dollars
Personnel.....						$
Equipment.....						$
Procurement....						$
Contract.....						$
F.O.R.....						$
Travel.....						$
Training.....						$
Aviation.....						$
Total						$

Sub-Act: ALL	Program Managmt	Fire Use and Fuels	Administ Support	Preventn	Init Atk/ Supprsn	Total Dollars
Personnel.....	296,333		188,166	58,716	1,111,017	$1,654,232
Equipment.....	6,078		3,316	3,315	42,336	$55,045
Procurement....	6,631		3,316	3,315	33,604	$46,866
Contract.....					182,377	$182,377
F.O.R.....					141,924	$141,924
Travel.....	17,685		7,461	3,315	25,200	$53,661
Training.....	8,290		4,696	1,989	22,936	$37,911
Aviation.....						$
Total	335,017		206,955	70,650	1,559,394	$2,172,016

FMP Table 6A
Budget Guidance Formula
Detail Listing

CA CDD: California Desert District, Option: 5AS

Line Item ID	Description	Productn	Suppt Org	Ops	Prv/Fuels	Admin
ADM060AIR	Pilot - Air Recon					11,053
ADM061BUDG	Budget - Program Analys					5,527
ADM061PERS	Personnel - Personnel C					11,053
ADM061RADO	Radio Tech					11,053
ADM063	Administrative Manageme					6,684
ADM065	Adm. Support - RRA					6,684
ADM066	Adm. Support - PSSCRA					6,684
ADM068	Adm. Support - BRA					6,684
ADM069	Adm. Support - NRA					6,684
ADMIN	Administrative Support					134,849
C1AVH2	HELISHOT CREW FOR H2	219,051				
E5AV3637	Apple Valley Type III	152,682				
E5AV3637A	Apple Valley Type III	133,577				
E5AV3638	Apple Valley Type III	152,682				
E5BR3636	Black Rock Type III	152,682				
E5HW3639	Hole-Wall Type III	152,682				
E5OL3634	Olancha Type III	152,682				
E6SW3645	Salt Wells Type IV	101,368				
FICC	Dispatchers - FICC		69,594			
H2AV554	Apple Valley Type II	197,852				
O1BSZFMO	BARSTOW ZONE FMO		61,278			
O1DFCO	DESERT FCO		61,278			
O1DFMO	DESERT FMO		89,905			
O1RSZFMO	RIDGECREST ZONE FMO		61,278			
O1SSZFMO	SOUTH COAST ZONE FMO		61,278			
O3BSZFTP	BARSTOW ZONE FPT				23,550	
O3RSZFPT	RIDGECREST ZONE FPT				23,550	
O3SSZFPT	SOUTH COAST ZONE FPT				23,550	
VEHICLES	Support Vehicles			37,249		
WTAV3690	Water Tender AV	37,293				
		1,452,551	404,611	37,249	70,650	206,955

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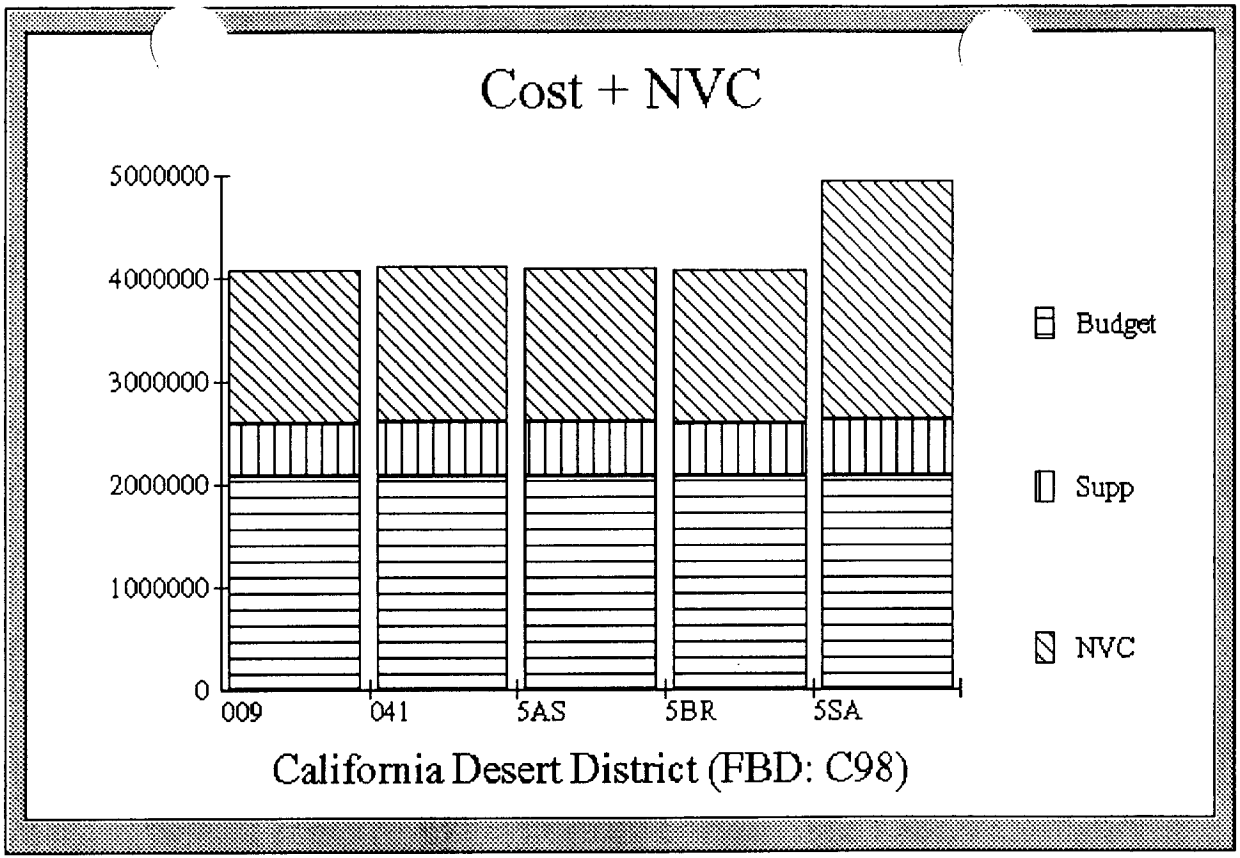
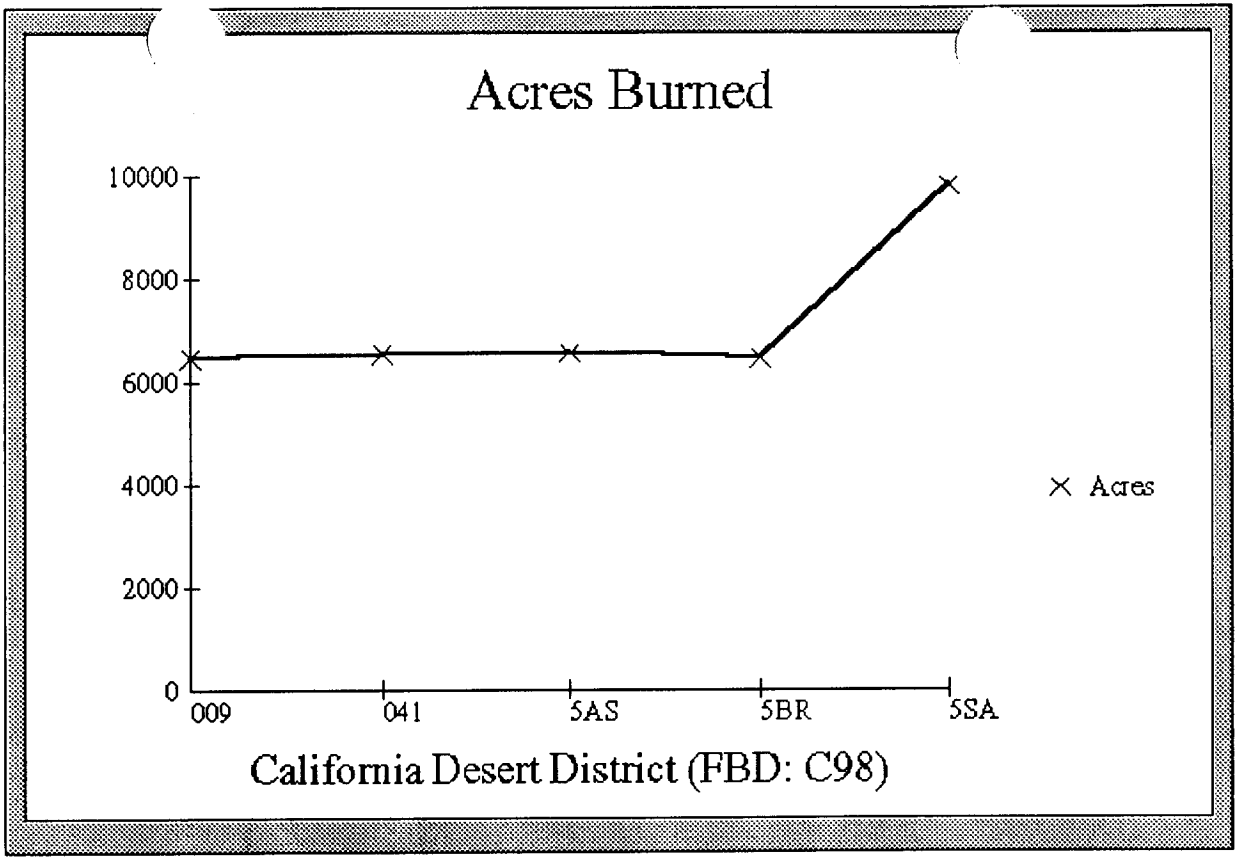
FMP Table 6
Budget Guidance Formula

CA CDD: California Desert District, Option: 5AS

CDD complexity level: MODERATE

	Productn	Suppt Org	Ops	Prv/Fuels	Admin
Budget:	1,452,551	404,611	37,249	70,650	206,955
Allowable Percent:		50%	35%	10%	10%
Actual Percent:		28%	2%	4%	10%


Cost + NVC
5000000
4000000
3000000
2000000
1000000
0
009
041
5AS
5BR
5SA
Budget
Supp
NVC
California Desert District (FBD: C98)


Acres Burned
10000
8000
6000
4000
2000
0
009
041
5AS
5BR
5SA
Acres
California Desert District (FBD: C98)

FMZ	RL	% Obj	Below Acres	Actual %	OK?	Fires Below	Total Fires
01	1	90	100	93.60	YES	43.15	46.10
01	2	90	100	89.05	NO	9.03	10.14
01	3	90	100	89.05	NO	3.28	3.69
01	4	90	100	89.05	NO	4.11	4.61
01	5	90	100	89.05	NO	4.93	5.53
01	6	90	100	89.05	NO	11.49	12.91
01	7	90	100	89.05	NO	3.28	3.69
01	8	90	100	85.36	NO	.79	.92
01	9	90	100	92.52	YES	3.41	3.69
01	10	90	100	85.36	NO	.79	.92
02	1	90	10	89.35	NO	5.40	6.05
02	2	90	10	89.35	NO	3.76	4.21
02	3	90	10	81.37	NO	2.35	2.89
02	4	90	10	89.35	NO	8.93	9.99
02	5	90	10	89.35	NO	2.82	3.16
03	1						
04	1						
04	2						
05	1						
05	2						

Program Option 041, FBD C98

FMZ	RL	% Obj	Below Acres	Actual %	OK?	Fires Below	Total Fires
01	1	90	100	93.60	YES	43.15	46.10
01	2	90	100	89.05	NO	9.03	10.14
01	3	90	100	89.05	NO	3.28	3.69
01	4	90	100	89.05	NO	4.11	4.61
01	5	90	100	89.05	NO	4.93	5.53
01	6	90	100	89.05	NO	11.49	12.91
01	7	90	100	89.05	NO	3.28	3.69
01	8	90	100	85.36	NO	.79	.92
01	9	90	100	92.52	YES	3.41	3.69
01	10	90	100	85.36	NO	.79	.92
02	1	90	10	89.35	NO	5.40	6.05
02	2	90	10	89.35	NO	3.76	4.21
02	3	90	10	81.37	NO	2.35	2.89
02	4	90	10	81.37	NO	8.13	9.99
02	5	90	10	89.35	NO	2.82	3.16
03	1						
04	1						
04	2						
05	1						
05	2						

Program Option 041, FBD C98

FMZ	RL	% Obj	Below Acres	Actual %	OK?	Fires Below	Total Fires
01	1	90	100	93.60	YES	43.15	46.10
01	2	90	100	89.05	NO	9.03	10.14
01	3	90	100	89.05	NO	3.28	3.69
01	4	90	100	89.05	NO	4.11	4.61
01	5	90	100	89.05	NO	4.93	5.53
01	6	90	100	89.05	NO	11.49	12.91
01	7	90	100	89.05	NO	3.28	3.69
01	8	90	100	85.36	NO	.79	.92
01	9	90	100	92.52	YES	3.41	3.69
01	10	90	100	85.36	NO	.79	.92
02	1	90	10	89.35	NO	5.40	6.05
02	2	90	10	89.35	NO	3.76	4.21
02	3	90	10	81.37	NO	2.35	2.89
02	4	90	10	81.37	NO	8.13	9.99
02	5	90	10	89.35	NO	2.82	3.16
03	1						
04	1						
04	2						

Program Option 5AS, FBD C98

FMZ	RL	% Obj	Below Acres	Actual %	OK?	Fires Below	Total Fires
01	1	90	100	93.60	YES	43.15	46.10
01	2	90	100	89.05	NO	9.03	10.14
01	3	90	100	89.05	NO	3.28	3.69
01	4	90	100	89.05	NO	4.11	4.61
01	5	90	100	89.05	NO	4.93	5.53
01	6	90	100	89.05	NO	11.49	12.91
01	7	90	100	89.05	NO	3.28	3.69
01	8	90	100	85.36	NO	.79	.92
01	9	90	100	89.05	NO	3.28	3.69
01	10	90	100	85.36	NO	.79	.92
02	1	90	10	89.35	NO	5.40	6.05
02	2	90	10	89.35	NO	3.76	4.21
02	3	90	10	81.37	NO	2.35	2.89
02	4	90	10	89.35	NO	8.93	9.99
02	5	90	10	89.35	NO	2.82	3.16
03	1						
04	1						
04	2						
05	1						

Program Option 5BR, FBD C98

FMZ	RL	% Obj	Below Acres	Actual %	OK?	Fires Below	Total Fires
01	1	90	100	93.60	YES	43.15	46.10
01	2	90	100	89.05	NO	9.03	10.14
01	3	90	100	89.05	NO	3.28	3.69
01	4	90	100	89.05	NO	4.11	4.61
01	5	90	100	89.05	NO	4.93	5.53
01	6	90	100	89.05	NO	11.49	12.91
01	7	90	100	89.05	NO	3.28	3.69
01	8	90	100	85.36	NO	.79	.92
01	9	90	100	92.52	YES	3.41	3.69
01	10	90	100	85.36	NO	.79	.92
02	1	90	10	89.35	NO	5.40	6.05
02	2	90	10	89.35	NO	3.76	4.21
02	3	90	10	81.37	NO	2.35	2.89
02	4	90	10	89.35	NO	8.93	9.99
02	5	90	10	89.35	NO	2.82	3.16
03	1						
04	1						
04	2						
05	1						
05	2						

Program Option 5SA, FBD C98

FMZ	RL	% Obj	Below Acres	Actual %	OK?	Fires Below	Total Fires
01	1	90	100	92.52	YES	42.65	46.10
01	2	90	100	89.05	NO	9.03	10.14
01	3	90	100	89.05	NO	3.28	3.69
01	4	90	100	89.05	NO	4.11	4.61
01	5	90	100	89.05	NO	4.93	5.53
01	6	90	100	89.05	NO	11.49	12.91
01	7	90	100	89.05	NO	3.28	3.69
01	8	90	100	85.36	NO	.79	.92
01	9	90	100	92.52	YES	3.41	3.69
01	10	90	100	85.36	NO	.79	.92
02	1	90	10	89.35	NO	5.40	6.05
02	2	90	10	89.35	NO	3.76	4.21
02	3	90	10	81.37	NO	2.35	2.89
02	4	90	10	89.35	NO	8.93	9.99
02	5	90	10	89.35	NO	2.82	3.16
03	1						
04	1						
04	2						
05	1						
05	2						